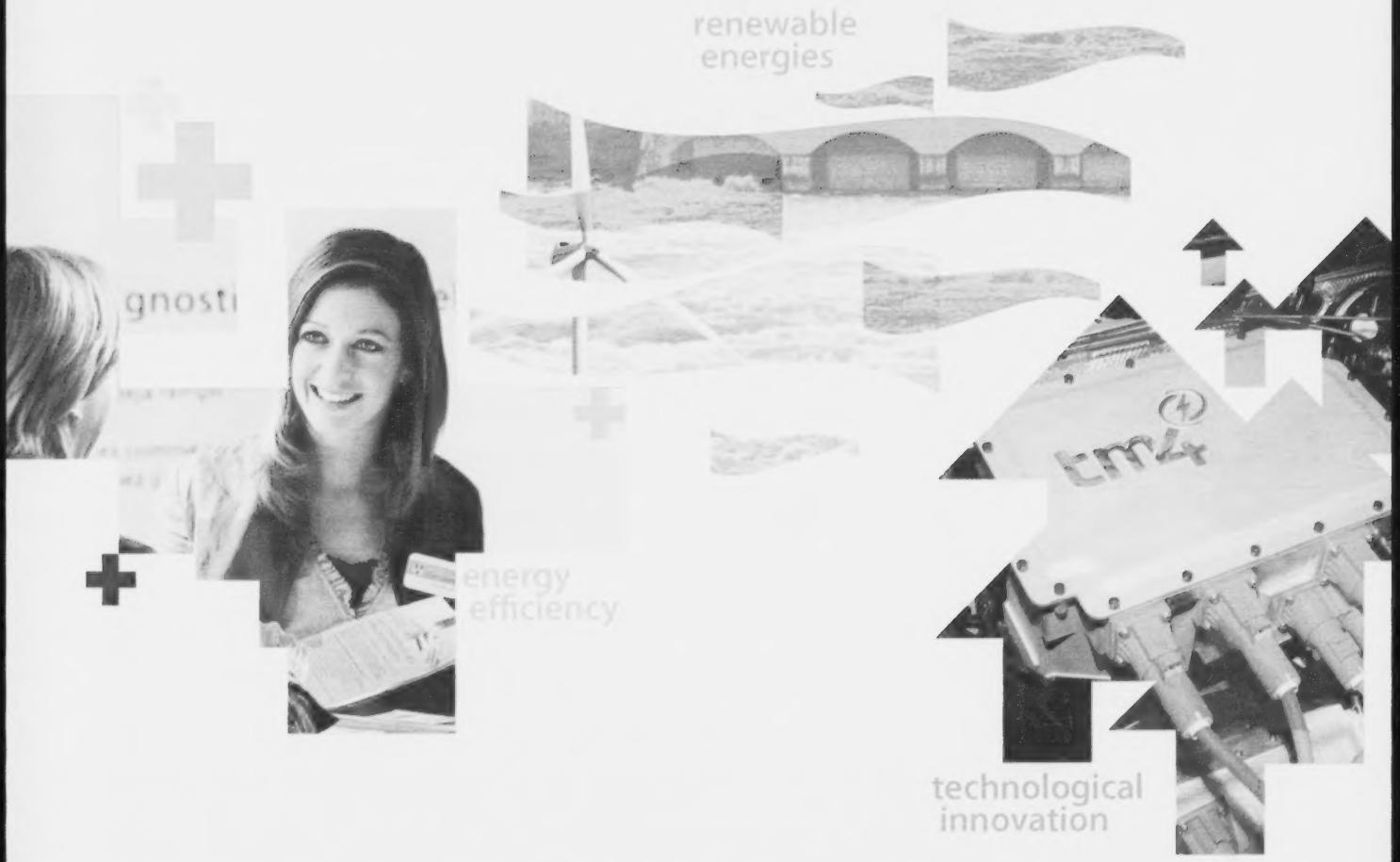
Hydro Québec

Strategic Plan | 2009–2013



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The *Strategic Plan 2009–2013* must be filed with the Québec government no later than August 1, 2009. It will be reviewed by a parliamentary commission prior to approval.

Note: Unless otherwise indicated, monetary amounts in the text are expressed in Canadian dollars.

HYDRO-QUÉBEC generates, transmits and distributes electricity. Its sole shareholder is the Québec government. It uses mainly renewable generating options, in particular hydroelectricity, and supports the development of wind energy through purchases from independent power producers. It also conducts research in energy-related fields, including energy efficiency.

The company comprises four divisions:

Hydro-Québec Production generates power for the Québec market and sells its surpluses on wholesale markets. It is also active in arbitraging and purchase/resale transactions.

Hydro-Québec TransÉnergie operates the most extensive transmission system in North America for the benefit of customers inside and outside Québec.

Hydro-Québec Distribution provides Quebecers with a reliable supply of electricity. To meet needs beyond the annual heritage pool which Hydro-Québec Production is obligated to supply at a fixed price, it mainly uses a tendering process. It also develops initiatives for encouraging its customers to make efficient use of electricity.

Hydro-Québec Équipement and Société d'énergie de la Baie James (SEBJ), a subsidiary of Hydro-Québec, design, build and refurbish generation and transmission facilities.

Business Objectives

Energy Efficiency	Renewable Energies	Technological Innovation
Electricity is a valuable resource.	Electricity from renewable sources is an essential component of sustainable development.	Technological innovation is a powerful engine for growth and performance.
That is why energy efficiency is at the heart of the company's business objectives.	That is why Hydro-Québec is beginning a new phase of large-scale hydroelectric development, to finish carrying out Québec's energy strategy and to implement the Northern Plan.	That is why Hydro-Québec is counting on new technologies to remain on the leading edge of its industry, improve customer services and further enhance its performance.
Hydro-Québec has set an ambitious goal: to achieve 8 TWh in energy savings by 2013, with a target of 11 TWh by 2015.	That is also why the company is continuing to connect wind farms of nearly 4,000 MW resulting from its tender calls of recent years.	That is also why electric ground transportation is becoming a thrust of the company's growth and innovation efforts.

Hydro-Québec Production	1. Increase hydroelectric generating capacity. 2. Step up exports. 3. Further enhance the division's performance.
Hydro-Québec TransÉnergie	1. Ensure the quality of power transmission service. 2. Increase transmission system capacity to meet customers' needs. 3. Further enhance the division's performance.
Hydro-Québec Distribution	1. Ensure the quality of customer services. 2. Step up energy efficiency efforts. 3. Meet electricity needs in a flexible manner. 4. Further enhance the division's performance.
Hydro-Québec Équipement and Société d'énergie de la Baie James	Carry out construction and refurbishment projects for Hydro-Québec Production and Hydro-Québec TransÉnergie on schedule and within budget.
Corporate Activities	Provide high-quality corporate services to the divisions. Contribute to the company's growth and improved efficiency. Participate in various initiatives to stem global warming. Implement the company's transportation electrification action plan.

Financial Outlook

Results ($M)	2009[a]	2010	2011	2012	2013
Net income	2,700	2,400	2,400	2,400	2,400
net of water-power royalties of	*563*	*600*	*632*	*653*	*642*
Dividends paid	2,252	1,897	1,715	1,645	1,650
Revenue	12,325	12,408	12,778	13,224	13,847
Investments	4,885	4,750	4,997	5,257	5,197
Rate adjustments forecasted for April 1[b]		0.2%	1.5%	2.5%	2.5%

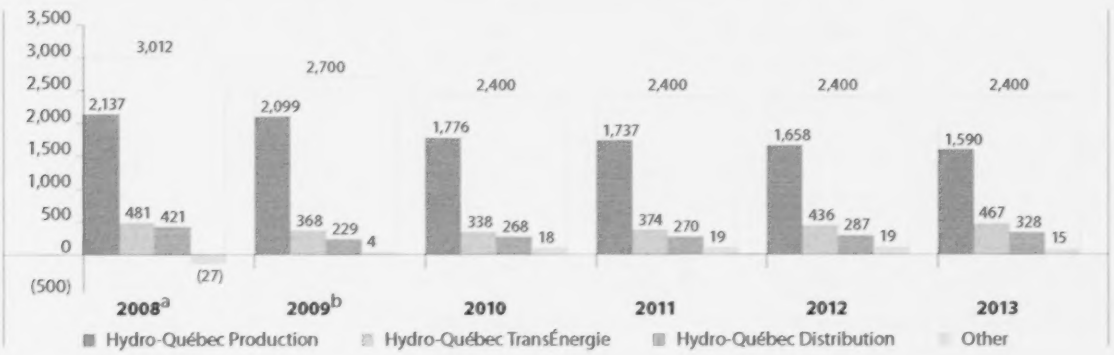
a) Projections based on actual data for the first four months of 2009.

b) An adjustment of 1.2% went into effect on April 1, 2009, following decision D-2009-021 of the Régie de l'énergie.

Forecasts for 2009–2013

- Commitment to income of $2.7 billion in 2009, and $2.4 billion a year from 2010 to 2013, for a total of $12.3 billion
- Dividends paid: $9.2 billion
- Revenue of close to $14 billion in 2013
- Investments of $25.1 billion

Contribution of Divisions to the Company's Income ($M)



a) Actual data.

b) Projections based on actual data for the first four months of 2009.

Hydro-Québec's Contribution to the Québec Economy for 2009–2013

- $13.4 billion in purchases of goods and services
- $9.2 billion in dividends paid
- $3.1 billion in water-power royalties paid into the Generations Fund
- 271,400 person-years in direct and indirect jobs
- $1.8 billion in taxes
- $0.9 billion in guarantee fees

1. Anchor Points

Hydro-Québec has defined its business objectives in terms of the following anchor points: the current economic situation, the Québec Energy Strategy 2006–2015 and the Northern Plan, Hydro-Québec Distribution's Electricity Supply Plan 2008–2017, the company's regulatory and rate framework, Hydro-Québec Production's commitments and the transition to the International Financial Reporting Standards (IFRS).

1.1 Economic Conditions

The overall business environment in which Hydro-Québec operates was dramatically changed in 2008–2009. The global economy has been going through the worst financial and economic crisis since World War II.[1] In 2009, this has led to a sharp decline in electricity demand from the industrial sector in Québec, especially from pulp and paper and from smelting and refining. The price of aluminum has also plummeted on global markets. As a result, revenue from sales in Québec will be affected over the entire Strategic Plan period because the rates applicable to electricity sales to some industrial customers are indexed to the price of aluminum (calculated in U.S. dollars).

Over the 2009–2013 period, economic conditions will exert downward pressure on export earnings even if exports remain very profitable. Two factors account for this situation. The first is the price of natural gas, which remains the reference fuel for power generation in northeastern North America. This price plunged by nearly 60% in 2008–2009, and forecasts indicate that it should remain below the 2008 level over the entire Strategic Plan period. The second factor is the strength of the Canadian dollar vis-à-vis the U.S. dollar. The impact of this will be felt most starting in 2011 because financial hedges are in place for 2009 and 2010.

1. International Energy Agency, *The Impact of the Financial and Economic Crisis on Global Energy Investment*, OECD/IEA, May 2009, 68 pages.

1.2 Québec Energy Strategy 2006–2015 and the Northern Plan

In the energy strategy unveiled in May 2006 under the title *Using Energy to Build the Québec of Tomorrow*,[2] the Québec government set out the path it would follow in the energy sector over the next 10 years.

Hydro-Québec has a central role to play in executing this strategy. The company was given a mandate to put together a portfolio of hydroelectric projects totaling 4,500 MW, integrate wind power purchased through tender calls, continue its innovation efforts and contribute to achieving energy savings of 11 TWh, all by 2015.

In its first follow-up to the energy strategy, published in May 2008, the government reaffirmed its original objectives. The follow-up shows that, by and large, the planned actions have been initiated, in particular those concerning the development of Québec's hydropower and wind power potential, electricity exports, energy efficiency and innovation.

When the Northern Plan was presented in November 2008, the Québec government announced that 3,500 MW of renewable energy (part of which would come from wind power and emerging sources) would be added, by 2035, to the capacity already called for in the energy strategy. The Northern Plan is incorporated into Hydro-Québec's portfolio of hydroelectric projects (see pages 22 and 23).

1.3 Electricity Supply Plan 2008–2017

Every three years, Hydro-Québec Distribution produces a supply plan for the following 10 years. This plan presents the forecast of customers' electricity needs, taking into account the energy efficiency measures implemented, and outlines the means and flexibility the division plans to use to ensure a secure supply of electricity in Québec. The plan must be approved by the Régie de l'énergie and is followed up annually.

In November 2007, Hydro-Québec Distribution filed its Electricity Supply Plan 2008–2017 with the Régie de l'énergie. It was approved in October 2008. The division submitted its first progress report on the plan to the Régie on October 31, 2008, based on the sales forecast of August 2008.

However, a severe recession has hit the United States and Canada. This major slowdown is still affecting Québec.

2. See: www.mrnf.gouv.qc.ca/english/publications/energy/strategy/energy-strategy-2006-2015.pdf.

For Hydro-Québec Distribution, this slowdown has resulted in a significant drop in electricity sales to industrial customers. For 2009 alone, sales to this customer category are expected to lag 8.5 TWh behind the August 2008 forecast. This has resulted in a profound change in the electricity requirements that the division must meet.

Forecasted Sales to Industrial Customers in 2009

Difference from progress report on the Electricity Supply Plan 2008–2017—October 2008 (TWh)

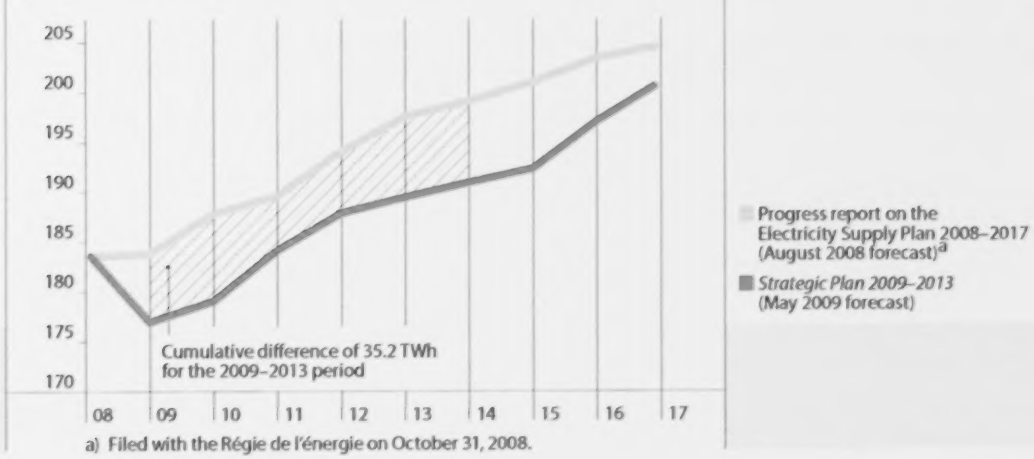
Sales to large-power customers[a]	**(7.4)**
Pulp and paper	(2.2)
Refining and smelting *including aluminum smelters (1.3)*	(3.0)
Mining and metals	(1.4)
Petroleum and chemicals	(0.5)
Other	(0.4)
Sales to small and medium-sized businesses[b]	**(1.1)**
Difference	**(8.5)**

a) The total was obtained from non-rounded figures.

b) Excluding reclassifications.

The May 2009 forecast by Hydro-Québec Distribution has been used for the current Strategic Plan. It differs considerably from the forecast contained in the progress report on the Electricity Supply Plan 2008–2017 filed in October 2008. The cumulative difference for the 2009–2013 period is 35.2 TWh.

Comparison of Energy Needs (All Customer Categories) (TWh)



a) Filed with the Régie de l'énergie on October 31, 2008.

Needs

According to the May 2009 forecast, electricity sales in Québec will reach 175.8 TWh in 2013, an increase of 5.5 TWh over 2008. This represents an average annual growth rate of 0.6%. Note that the progress report on the Electricity Supply Plan 2008–2017 filed with the Régie in October 2008 forecasted sales of 183.6 TWh for 2013, which was 7.8 TWh more than the May 2009 forecast.

The May 2009 forecast factors in the annual energy savings target of 11 TWh for 2015.

Energy Needs (TWh)

	2008[a]	2009[b]	2010	2011	2012	2013	2017
Energy efficiency	**(3.4)**	**(4.1)**	**(4.9)**	**(6.0)**	**(7.0)**	**(8.1)**	**(11.0)**
Electricity sales in Québec (after energy efficiency)[c]	**170.3**	**164.0**	**166.3**	**171.0**	**174.4**	**175.8**	**186.3**
Residential and farm	*60.8*	*62.1*	*61.5*	*61.8*	*62.4*	*62.5*	*64.2*
General and institutional	*35.2*	*34.2*	*34.3*	*35.0*	*35.4*	*35.5*	*36.2*
Industrial	*69.1*	*62.5*	*65.3*	*69.0*	*71.3*	*72.6*	*80.4*
Other	*5.2*	*5.2*	*5.2*	*5.2*	*5.3*	*5.3*	*5.5*
Plus transmission and distribution losses and other factors	**13.2**	**12.8**	**12.8**	**13.1**	**13.4**	**13.5**	**14.2**
Energy needs[c]	**183.6**	**176.8**	**179.0**	**184.1**	**187.8**	**189.3**	**200.5**

a) Actual data.

b) Forecast based on actual data for the first four months of 2009.

c) The totals were obtained from non-rounded figures.

Over the longer term, between 2008 and 2017, sales to residential customers (Residential and farm category) will increase by 3.4 TWh, at an average rate of 0.6% a year. This growth will be driven by an increased number of households (averaging nearly 34,000 new households a year due to population growth) and the conversion of a large number of homes from oil to electric heating (over 10,000 homes a year on average).

Between now and 2017, sales to commercial and institutional customers (General and institutional category) will rise by 0.3% annually on average, or 1.0 TWh in all, due to increased economic activity in the service sector. The drop in sales in 2009 is attributable to the reclassification of some customers in this category into the Industrial category.

In 2009, sales to industrial customers will be lower than in 2008, mainly because of significant downsizing in the pulp and paper sector. During the 2008–2017 period, however, these sales will increase by 11.3 TWh, at an average rate of 1.7% a year, which accounts for over two-thirds of the growth in total electricity sales. This growth will be driven by the anticipated turnaround in some industries beginning in 2010 and by expected investments, mainly in the aluminum industry.

Capacity Needs (MW)

Winter	2008–2009[a]	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014	2016–2017
Energy efficiency	(458)	(582)	(704)	(883)	(1,069)	(1,251)	(1,615)
Peak demand (after energy efficiency)	36,552	35,353	36,367	36,914	37,355	37,706	39,282
Plus reliability reserve requirement	n. a.[b]	3,279	3,630	3,887	4,088	4,127	4,351
Capacity needs	36,552	38,632	39,997	40,801	41,443	41,833	43,633

a) Actual data.

b) A 3,485-MW reserve, based on expected adjusted needs of 36,040 MW, had been planned in the progress report for the Electricity Supply Plan 2008–2017 filed in October 2008.

Peak capacity requirements will reach 39,282 MW in the winter of 2016–2017. This represents an increase of 2,730 MW compared with the 36,552 MW recorded in the winter of 2008–2009, 860 MW of which can be attributed to below-normal temperatures. A reduction of 1,615 MW stemming from Hydro-Québec's energy efficiency programs has been factored in. In addition, Hydro-Québec Distribution maintains a capacity reserve to deal with factors such as unexpected increases in demand. This reserve is based on the Northeast Power Coordinating Council (NPCC) reliability criterion stating that the loss-of-load expectation in a control area must not exceed one day in 10 years. The reserve is 4,351 MW for the winter of 2016–2017.

Means employed

In 2008, the heritage pool met 97% of energy needs in Québec. As set out in the *Act respecting the Régie de l'énergie*, Hydro-Québec Production must provide 165 TWh to Hydro-Québec Distribution at a fixed price of 2.79¢/kWh.

Non-heritage supplies already under contract will total 19.1 TWh in 2017. The ongoing renewable energy tender calls and purchasing program prescribed by Orders in Council of the Québec government—one block for biomass cogeneration facilities, one block for Aboriginal and other communities' wind power projects and another block for small hydro—will result in an additional 3.3 TWh by 2017, for a total (based on non-rounded figures) of 22.3 TWh.

For the 2008–2017 period, total energy from the heritage pool and current contracts exceeds the requirements of Québec customers. As a result, Hydro-Québec Distribution has to adjust its energy supplies in order to restore the necessary balance between supply and customer demand.

The heritage pool (165 billion kWh at a fixed price of 2.79¢/kWh) will make up more than 90% of the division's supplies for the plan horizon.

Beyond the heritage pool volume, the division procures power from the market through tendering. The Régie de l'énergie must approve the terms and conditions of the tender calls, as well as the contracts awarded to the winning bidders.

To do so, the division has signed agreements to cancel or reduce deliveries of certain contracted quantities of energy. On September 10, 2008, the Régie de l'énergie approved the 2009 renewal of the agreement that Hydro-Québec Distribution signed in 2007 with TransCanada Energy (TCE) to suspend deliveries totaling 4.3 TWh. According to the Régie, this agreement is consistent with sound management of the energy balance.[3] For 2010, a new agreement to suspend deliveries was signed with TCE and submitted to the Régie for approval in July 2009. Hydro-Québec Distribution has negotiated the possibility of renewing this agreement with TCE from year to year.

On May 26, 2008, the Régie de l'énergie approved agreements that Hydro-Québec Distribution had negotiated with Hydro-Québec Production, under which a portion of the baseload and cycling power provided for in contracts resulting from a 2002 tender call and scheduled for delivery during the 2008–2011 period can be deferred. In its decision, the Régie noted that such agreements provide a way of managing supplies flexibly without costs over and above those stipulated in the original contracts.[4] In 2009, Hydro-Québec Distribution plans on delaying deliveries of 4.2 TWh in this way. In fall 2009, an application will be filed with the Régie de l'énergie to modify these agreements so as to allow the deferral of post-2011 deliveries, among other things.

The following tables show the effect of the means employed on Hydro-Québec Distribution's supply portfolio.

3. See: www.regie-energie.qc.ca/audiences/decisions/D-2008-114.pdf (in French only).
4. See: www.regie-energie.qc.ca/audiences/decisions/D-2008-076Motifs.pdf (in French only).

Energy Supplies (TWh)

	2008[a]	2009[b]	2010	2011	2012	2013	2017
Energy needs	**183.6**	**176.8**	**179.0**	**184.1**	**187.8**	**189.3**	**200.5**
Less heritage pool electricity (maximum of 165 TWh plus losses of 13.9 TWh, or 178.9 TWh)	178.9	174.3	177.6	178.8	178.9	178.9	178.9
Supplies required beyond the heritage pool[c]	**4.7**	**2.4**	**1.5**	**5.3**	**8.9**	**10.5**	**21.6**
Less non-heritage supplies[c]	**10.5**	**10.9**	**11.3**	**11.5**	**14.3**	**17.6**	**22.3**
Contracts signed							
TransCanada Energy (Bécancour) (A/O 2002-01)	*4.3*	*4.3*	*4.3*	*4.3*	*4.3*	*4.3*	*4.1*
Hydro-Québec Production – Baseload deliveries (A/O 2002-01)	*3.1*	*3.1*	*3.1*	*3.1*	*3.1*	*3.1*	*3.1*
Hydro-Québec Production – Cycling deliveries (A/O 2002-01)	*2.2*	*2.2*	*2.2*	*2.2*	*2.2*	*2.2*	*2.2*
Biomass (A/O 2003-01)	*0.3*	*0.3*	*0.3*	*0.3*	*0.3*	*0.3*	*0.3*
Wind power – 990 MW (A/O 2003-02)	*0.7*	*1.0*	*1.4*	*1.5*	*2.5*	*2.9*	*3.2*
Wind power – 2,005 MW (A/O 2005-03)	–	–	–	*0.1*	*1.6*	*3.3*	*6.2*
Tender calls and purchasing program under way							
Biomass – 125 MW	–	–	–	–	*0.1*	*0.9*	*0.9*
Wind power – Projects by Aboriginal and other communities: 2 x 250 MW	–	–	–	–	–	*0.4*	*1.6*
Small hydro – Community projects: 150 MW	–	–	–	–	*0.2*	*0.3*	*0.8*
Surplus[c]	**(5.8)**	**(8.4)**	**(9.8)**	**(6.2)**	**(5.4)**	**(7.1)**	**(0.7)**
Less suspended and deferred supplies[c]	**(6.3)**	**(8.5)**	**(8.5)**	**(6.3)**	**(6.0)**	**(6.8)**	**(0.7)**
TransCanada Energy (Bécancour) (A/O 2002-01)	*(4.3)*	*(4.3)*	*(4.3)*	*(4.3)*	*(4.3)*	*(4.3)*	–
Hydro-Québec Production – Baseload deliveries (A/O 2002-01)	*(1.4)*	*(2.5)*	*(2.6)*	*(1.0)*	*(1.0)*	*(1.4)*	*0.1*
Hydro-Québec Production – Cycling deliveries (A/O 2002-01)	*(0.6)*	*(1.7)*	*(1.7)*	*(1.0)*	*(0.7)*	*(1.1)*	*(0.7)*
Additional supplies required (surplus) after suspended and deferred supplies[c]	**0.5**	**0.1**	**(1.3)**	**0.1**	**0.6**	**(0.3)**	**0.0**

a) Actual data.

b) Forecast incorporating actual data for the first four months of 2009.

c) Totals were obtained from non-rounded figures.

As well as meeting energy needs, Hydro-Québec Distribution must ensure that it meets the capacity requirements of its customers, which peak in the winter. The division's capacity supplies portfolio consists of the following:

Capacity Supplies (MW)

Winter	2008–2009[a]	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014	2016–2017
Capacity needs	**36,552**	**38,632**	**39,997**	**40,801**	**41,443**	**41,833**	**43,633**
Less heritage pool electricity (maximum of 34,342 MW plus 3,100 MW reserve, or 37,442 MW)		37,442	37,442	37,442	37,442	37,442	37,442
Supplies required beyond the heritage pool		**1,190**	**2,555**	**3,359**	**4,001**	**4,391**	**6,191**
Less non-heritage supplies		**1,187**	**2,490**	**2,880**	**3,357**	**3,687**	**4,610**
Contracts signed							
TransCanada Energy (Bécancour) (A/O 2002-01)[b]		–	–	–	–	–	*547*
Hydro-Québec Production – Baseload deliveries (A/O 2002-01)		*350*	*350*	*350*	*350*	*350*	*350*
Hydro-Québec Production – Cycling deliveries (A/O 2002-01)		*250*	*250*	*250*	*250*	*250*	*250*
Hydro-Québec Production – Deferred delivery agreements		–	*400*	*400*	*400*	*400*	*400*
Biomass (A/O 2003-01)		*41*	*41*	*41*	*41*	*41*	*41*
Wind power – 990 MW[c] *(A/O 2003-02)*		*156*	*200*	*351*	*401*	*401*	*401*
Wind power – 2,005 MW[c] *(A/O 2005-03)*		–	–	*214*	*446*	*636*	*871*
Tender calls and purchasing program under way							
Biomass – 125 MW		–	–	–	*125*	*125*	*125*
Wind power – Projects by Aboriginal and other communities: 2 x 250 MW[c]		–	–	–	*45*	*135*	*225*
Small hydro – Community projects: 150 MW		–	–	*25*	*50*	*100*	*150*
Interruptible electricity		*140*	*1,000*	*1,000*	*1,000*	*1,000*	*1,000*
Voltage reduction		*250*	*250*	*250*	*250*	*250*	*250*
Additional capacity required (rounded off to the nearest 10)		**0**	**60**	**480**	**640**	**700**	**1,580**

a) Actual data.

b) Takes account of signed and upcoming suspension agreements with TransCanada Energy.

c) Set at 35% of contractual power until the winter of 2010–2011, and 45% subsequently (wind farms and integration agreement).

Hydro-Québec will continue to rely on the complementarity of hydroelectricity and wind power to maintain a high-quality supply. To compensate for the variable nature of winds, Hydro-Québec Distribution has already signed a wind power integration agreement with Hydro-Québec Production that was approved by the Régie de l'énergie in February 2006. Under this agreement, Hydro-Québec Production is providing balancing services for wind power deliveries resulting from the first tender call (990 MW).

In accordance with the expectations of the Régie,[5] Hydro-Québec Distribution is currently analyzing the potential contribution of wind farms during the peak demand period. Based on the conclusions drawn, when the current integration agreement ends (2011), Hydro-Québec Distribution will propose a new one which will also cover the wind power resulting from the second (2,005 MW) and third (2 x 250 MW) tender calls. Until the new agreement is approved, Hydro-Québec Distribution estimates that the firm power from wind generation will total roughly 1,500 MW in the winter of 2016–2017.

This will be supplemented by capacity resulting from the call for biomass energy and the purchasing program for small hydro, for a total of 275 MW by 2016–2017.

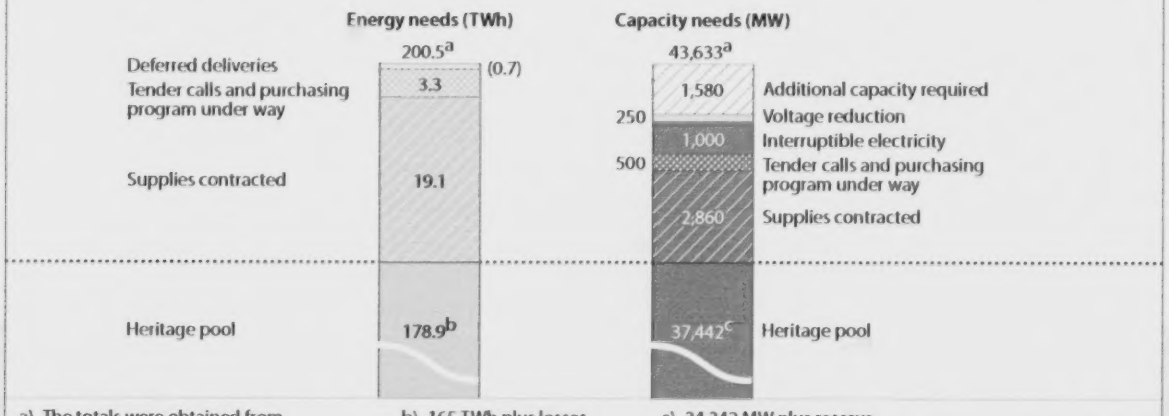
The application to modify the existing deferred-delivery agreements with Hydro-Québec Production, which will be submitted to the Régie de l'énergie for approval, will also allow Hydro-Québec Distribution to benefit from the additional capacity associated with the deferred deliveries, up to a maximum of 400 MW a year in firm power for the entire period covered by the Electricity Supply Plan 2008–2017.

In addition, to handle very short-term fluctuations in capacity needs, Hydro-Québec Distribution can ask large-power customers that have signed up for the interruptible electricity option to reduce their power demand in return for financial compensation. Since 2006, the division has been offering a similar option to medium-power customers. The Electricity Supply Plan 2008–2017 provides for the renewal of these options, yielding an expected contribution of 1,000 MW. The division can also implement conservation voltage reduction, as do other North American power grid operators, for another 250 MW.

Taking account of the needs and means anticipated to date, additional capacity will be required during the period covered by the Electricity Supply Plan 2008–2017. The division will use long- and short-term markets to meet these requirements.

5. See: www.regie-energie.qc.ca/audiences/decisions/D-2008-133.pdf (in French only).

Electricity Supplies for Québec – 2017 Horizon



a) The totals were obtained from non-rounded figures.

b) 165 TWh plus losses.

c) 34,342 MW plus reserve.

1.4 Rates and Regulation

Rate adjustment applications are filed each year for approval by the Régie de l'énergie. In public hearings, the Régie conducts a detailed analysis of the justification and forecasts underlying these applications. In March 2009, the Régie approved a 1.2% rate adjustment effective April 1, 2009.[6] Over the next four years, Hydro-Québec Distribution forecasts adjustments of 0.2% (2010), 1.5% (2011), 2.5% (2012) and 2.5% (2013).

These adjustments reflect the trend in the main cost drivers for the Québec market and the increase in Hydro-Québec Distribution's revenue. Rates are adjusted when the forecasted additional revenue, before rate adjustment, is not sufficient to cover the forecasted additional cost of supplying electricity and serving customers. The largest annual fluctuations are in electricity supply costs, as shown in the table below. In 2010, supply costs will fall, reflecting the decline in Québec sales, as will the forecasted revenue before rate adjustment. The $19-million difference between the decline in costs and the decline in revenue accounts for the 0.2% rate adjustment application for April 1, 2010.

Change in Regulated Costs – Hydro-Québec Distribution ($M)

Year-over-year change	2009	2010	2011	2012	2013
Electricity supplies	(42)	(336)	282	275	226
Rate impact	*(0.5%)*	*(3.5%)*	*2.8%*	*2.7%*	*2.1%*
Transmission service	(50)	(41)	1	68	95
Rate impact	*(0.5%)*	*(0.4%)*	*0.0%*	*0.6%*	*1.0%*
Distribution service	68	69	169	75	52
Rate impact	*0.5%*	*0.7%*	*1.7%*	*0.8%*	*0.5%*
Total additional costs	**(24)**	**(308)**	**452**	**418**	**373**
Rate impact	***(0.5%)***	***(3.2%)***	***4.5%***	***4.1%***	***3.6%***
Less additional revenue before rate adjustment[a]	(138)	(327)[b]	306	167	115
Rate impact	*1.7%*	*(3.4%)*	*3.0%*	*1.6%*	*1.1%*
Shortfall	**114**	**19**	**146**	**251**	**258**
Forecasted rate adjustment	***1.2%***[c]	***0.2%***	***1.5%***	***2.5%***	***2.5%***

a) Drop in sales when negative.

b) 2010 drop corresponding to the variance from the 2009 rate filing (in which the electricity sales forecast was 170.7 TWh).

c) Adjustment effective April 1, 2009, following decision D-2009-021 of the Régie de l'énergie.

6. See: www.regie-energie.qc.ca/audiences/decisions/D-2009-021.pdf (in French only).

Commencing in 2011, electricity supply costs will rise in step with the increase in industrial customers' needs and the growth in residential demand. The integration of wind power—at 8.3¢/kWh for the first tender call and 10.5¢/kWh for the second one—largely explains the higher costs for supply and transmission service from 2011 to 2013. The greater increase in distribution costs in 2011 reflects the anticipated impact of the changeover to the International Financial Reporting Standards (IFRS).

1.5 Hydro-Québec Production Commitments

Hydro-Québec Production manages and develops its facilities in such a way as to meet its commitments to Hydro-Québec Distribution and its other long-term customers, while taking advantage of business opportunities in Québec and elsewhere in northeastern North America.

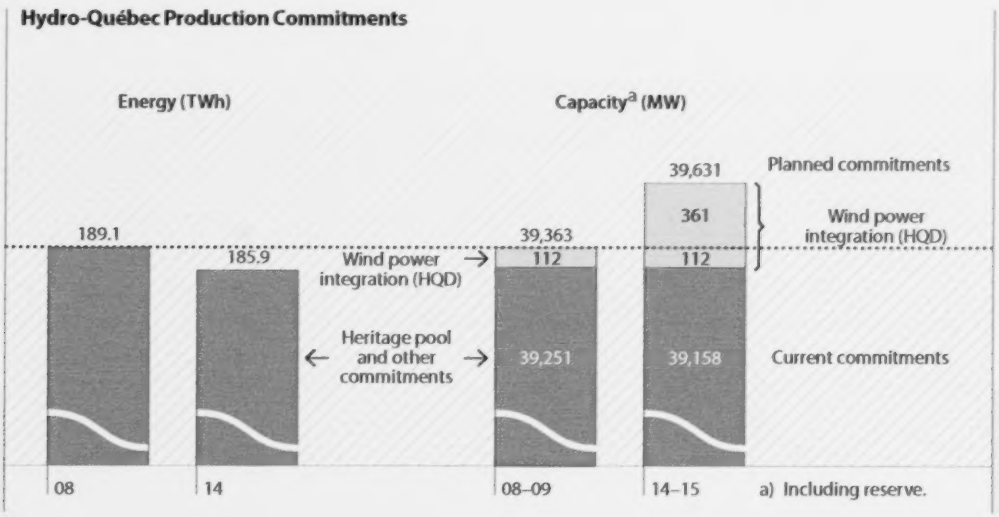
In 2008, Hydro-Québec Production's energy commitments totaled 189.1 TWh: 178.9 TWh for the heritage pool, 7.0 TWh for other commitments in and outside Québec (Vermont Joint Owners and Cornwall Electric[7]), and 3.2 TWh under contracts signed in 2002 with Hydro-Québec Distribution.[8] Peak power commitments in winter 2008–2009 were 39,363 MW.

The division's energy commitments will decrease over the term of the Strategic Plan, mainly as a result of the planned acquisition of an interest in the McCormick hydroelectric generating station on the Manicouagan.

Capacity commitments will total 39,631 MW at the 2014–2015 winter peak, including nearly 500 MW in firming capacity that will be supplied to facilitate the integration of wind farm output purchased by Hydro-Québec Distribution.

7. Hydro-Québec Production signed a new agreement with Cornwall Electric in May 2008, extending deliveries until 2019.
8. In May 2008, the Régie de l'énergie approved the agreements signed by Hydro-Québec Distribution and Hydro-Québec Production postponing deliveries planned for the 2008–2011 period.

Hydro-Québec Production Commitments



Québec's energy security

Hydro-Québec Production is responsible for ensuring Québec's energy security. To meet our domestic commitments and our long-term supply contracts outside Québec, we maintain a sufficient energy reserve to offset a potential runoff deficit of 64 TWh over two consecutive years and 98 TWh over four consecutive years. We also keep a sufficient capacity reserve to fulfill our commitments in Québec and limit the loss-of-load expectation to one day every 10 years. These reliability criteria will not change over the term of the *Strategic Plan 2009–2013.*

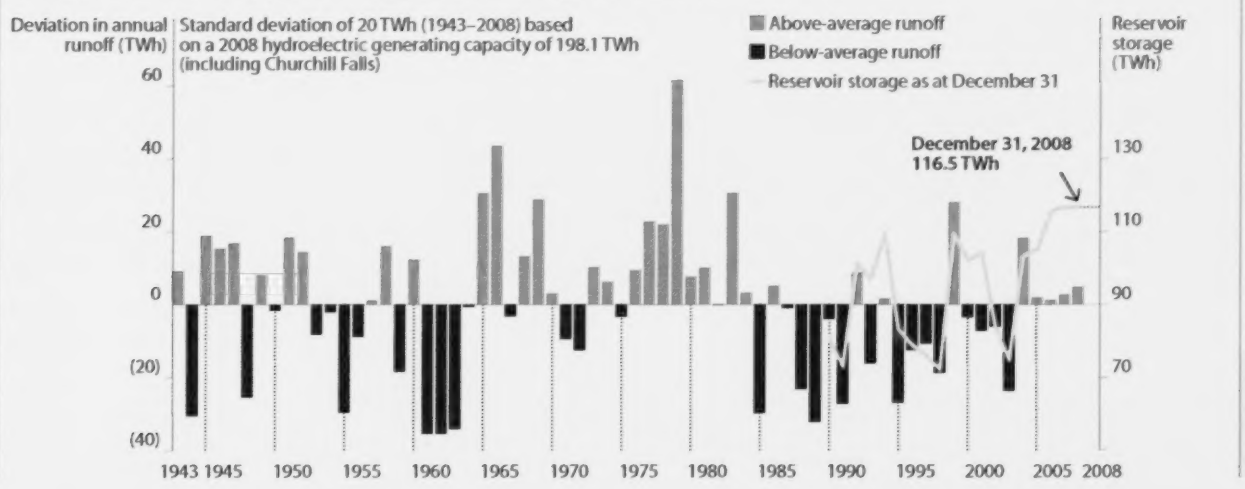
Reservoir storage is a major component of Québec's energy security. As at December 31, 2008, it stood at 116.5 TWh, an adequate level, historically speaking, relative to commitments in effect at that date.

The annual margin of output flexibility is another key element in the energy security of Québec. It enables Hydro-Québec Production to replenish its reservoir storage after a period of low runoff by reducing its short-term sales outside Québec. Variations in runoff may alter output by 20 TWh over a one-year period (standard deviation).

In 2008, available output was 197.9 TWh (see table on page 18), for a surplus of only 8.9 TWh relative to our commitments. Favorable runoff conditions and short-term purchases allowed us to add 7.5 TWh to the annual margin of flexibility, for a total of 16.4 TWh.

Once the Rupert diversion goes into operation in 2010, we will be able to rely on an annual margin of flexibility of more than 20.0 TWh without resorting to short-term purchases. A portion of the available resources can then be used for energy and capacity sales under medium- and long-term contracts.

Variation in Annual Runoff (1943–2008) and Reservoir Storage (1990–2008)



Water-power royalties

Hydro-Québec Production has paid water-power royalties since January 1, 2007.[9] In 2007, a transition year when the "half-rate" rule applied, royalties paid by the division totaled $267 million. They rose to $552 million in 2008, due to the application of the full rate. Subsequent increases will be based on hydroelectric output and the Consumer Price Index (CPI).

1.6 International Financial Reporting Standards

On February 13, 2008, the Canadian Accounting Standards Board (AcSB) confirmed that the full changeover to International Financial Reporting Standards (IFRS) will take effect for interim and annual financial statements relating to fiscal years beginning on or after January 1, 2011, with comparative information presented for fiscal 2010. Canadian generally accepted accounting principles (GAAP) are already evolving and will continue to evolve until January 1, 2011, in order to harmonize with IFRS.

Like Canadian GAAP, IFRS are a single, summary set of standards based on professional judgment. Since 2005, they have been applied in about 100 countries around the world, primarily in the European Union and Australia. Japan and China are also implementing an IFRS convergence plan.

The AcSB has proposed that IFRS be required for publicly accountable enterprises, which is the case of Hydro-Québec.

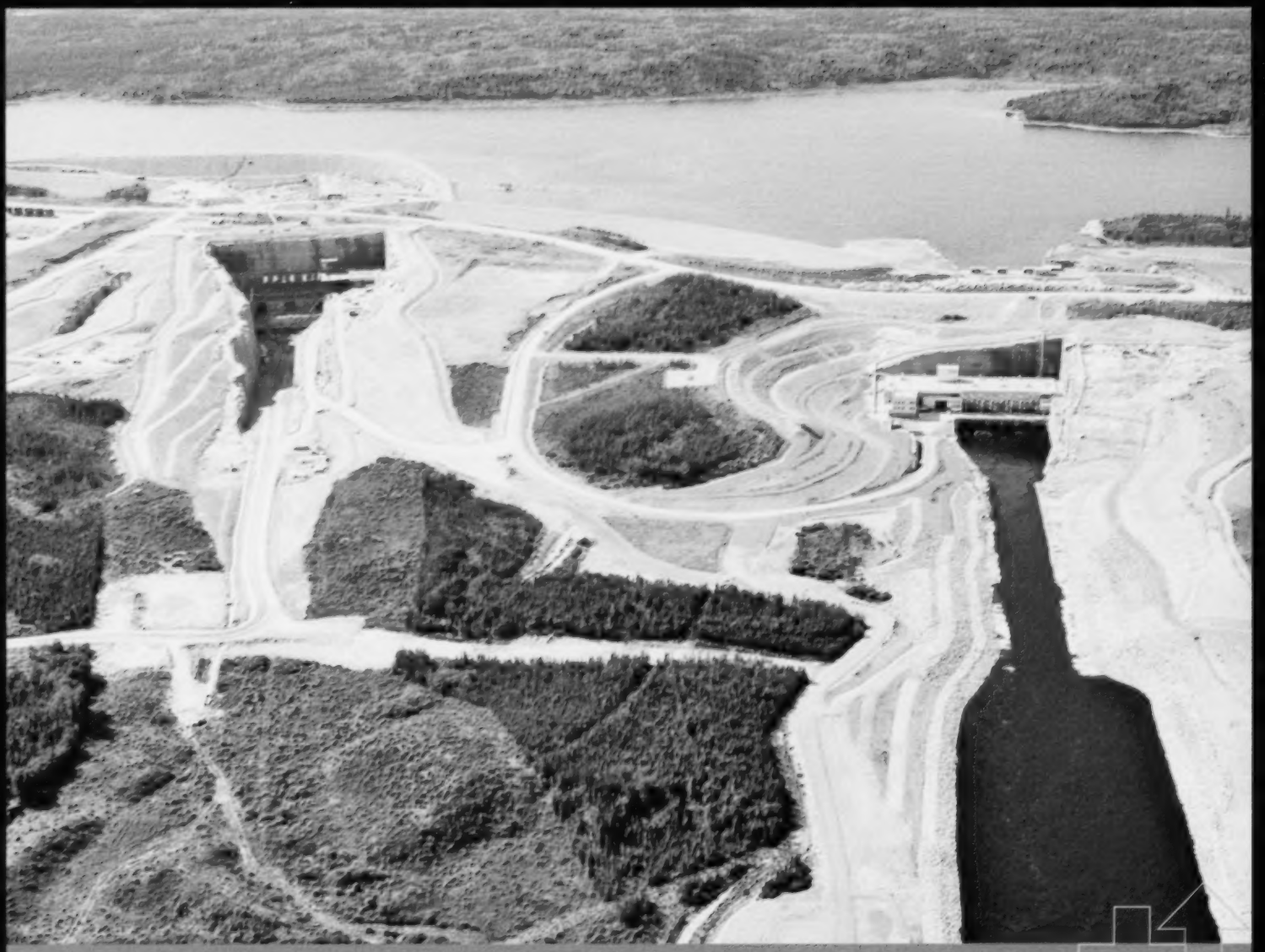
The company has prepared an IFRS conversion plan and set up a work team to complete this task. In 2008, the team initiated the first phase of the conversion, namely the diagnostic study. Through this study, the main differences between Canadian GAAP and IFRS were established and IFRS implementation strategies were devised.

Hydro-Québec will adopt IFRS as at January 1, 2011. In order to make the transition more seamless, the following schedule has been drawn up:

2008	2009	2010	2011
• Diagnostic study	• Diagnostic study (completion) • Systems modification • Disclosure (sample financial statements and complete review of the notes to financial statements) • Preparation of an employee training plan	• Preparation of 2010 comparative data in accordance with IFRS • Employee training	• Changeover to IFRS (disclosure of 2010 comparative data in accordance with IFRS)

9. Hydro-Québec has been required to pay water-power royalties since it became subject to the *Watercourses Act*.

2. Business Objectives



Eastmain-1 powerhouse and Eastmain-1-A construction site

Hydro-Québec Production

Objectives

1. Increase hydroelectric generating capacity.
2. Step up exports.
3. Further enhance the division's performance.

Indicators

- Additional generating capacity brought on stream between 2008 and 2013 (MW)
- Gentilly-2 generating station – refurbishment completed between 2009 and 2013
- Investments in long-term operability ($M)
- Gross hydroelectric output (TWh)
- Average cost of generation (¢/kWh)

Financial Outlook ($M)	2008 (actual)	2009 (projected[a])	2010	2011	2012	2013	Total 2009–2013
Contribution to company's income	2,137	2,099	1,776	1,737	1,658	1,590	8,860
Investments	1,894	2,454	2,244	1,950	2,068	1,653	10,369

a) Projections based on actual data for the first four months of 2009.

Hydro-Québec Production – Energy and Capacity Balance

RESERVOIR STORAGE (TWh)	2008 (actual)	2009	2010	2011	2012	2013	2014	Growth 2008–2013
As at January 1	116.6	116.5	112.4	111.1	105.6	99.5	99.7	(17.1)

ANNUAL ENERGY (TWh)								
Available output								
Hydroelectric generation	158.1	159.6	160.3	160.3	160.3	160.4	160.4	
Thermal generation	0.0	0.3	0.2	0.4	0.5	0.2	0.2	
Nuclear generation – Gentilly-2	3.9	4.5	4.5	1.1	0.0	5.3	5.7	
Long-term purchases (including Churchill Falls)	35.9	34.3	34.3	34.2	34.1	34.1	34.1	
	197.9	**198.7**	**199.3**	**196.0**	**194.9**	**199.9**	**200.3**	**2.0**
Commitments								
Deliveries in Québec								
Heritage pool electricity	178.9	174.3	177.6	178.8	178.9	178.9	178.9	
Hydro-Québec Distribution – Call for tenders A/O 2002-01	3.2	1.1	1.0	3.2	3.6	2.8	2.5	
Other (deliveries under agreement, generating station service)	4.2	3.5	3.2	2.1	2.1	2.1	2.1	
Deliveries outside Québec								
Long-term contracts	2.8	2.8	2.8	2.8	2.8	2.4	2.4	
	189.1	**181.7**	**184.5**	**187.0**	**187.4**	**186.2**	**185.9**	**(2.9)**
Available output *less* commitments	**8.9**	**17.0**	**14.8**	**9.0**	**7.5**	**13.8**	**14.5**	**4.9**
Variation in reservoir storage and electricity purchases								
Runoff (deviation from average)	4.3	(4.8)	0.0	0.0	0.0	0.0	0.0	
Decrease (increase) in reservoir storage: leveraging, replenishment and adjustment	0.8	4.0	1.4	5.5	6.1	(0.2)	(3.8)	
New purchases from independent power producers	0.0	0.0	0.1	0.5	0.5	0.5	0.5	
Short-term purchases	2.4	0.7	1.8	0.1	0.1	0.1	0.1	
	7.5	**0.0**	**3.2**	**6.1**	**6.7**	**0.4**	**(3.2)**	**(7.1)**
New generating capacity 2008–2014								
Rapides-des-Cœurs and Chute-Allard	0.05	0.6	0.9	0.9	0.9	0.9	0.9	0.8
Rupert diversion (gains at LG-1, LG-2-A and Robert-Bourassa)		0.5	6.0	6.0	5.3	5.3	5.3	
Eastmain-1-A				1.0	2.3	2.3	2.3	8.7
Sarcelle				0.1	1.0	1.1	1.1	
Romaine complex (2014–2020)							0.7	
	0.05	**1.1**	**6.9**	**7.9**	**9.5**	**9.6**	**10.3**	**9.5**
Margin of flexibility and uncommitted energy	**16.4**	**18.1**	**24.9**	**23.0**	**23.8**	**23.8**	**21.6**	

PEAK CAPACITY (MW)	Winter 2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	Growth 2008–2013
Available capacity	40,303	40,131	40,104	39,270	39,938	39,938	39,688	(365)
Commitments								
Capacity associated with heritage pool, other commitments in Québec and contracts outside Québec	36,091	35,796	36,078	36,078	36,018	35,968	36,018	(123)
Reserve requirement	3,160	3,140	3,140	3,140	3,140	3,140	3,140	(20)
	39,251	38,936	39,218	39,218	39,158	39,108	39,158	(143)
Firming capacity for wind power integration (contracted and planned)	112	156	200	203	313	406	473	294
	39,363	**39,092**	**39,418**	**39,421**	**39,471**	**39,514**	**39,631**	**151**
Available capacity *less* commitments	940	1,040	686	(151)	468	425	58	(515)
Electricity purchases (from independent producers and short-term)	0	0	55	70	70	70	70	70
New generating capacity 2008–2014 (excluding capacity reserve)	77	180	170	978	1,048	1,078	2,218	1,001
Uncommitted capacity	1,017	1,220	911	897	1,586	1,573	2,346	556

Objective 1: Increase hydroelectric generating capacity.

In addition to ensuring Québec's energy security, hydroelectricity plays a key environmental role, both in Québec and throughout northeastern North America. It also provides a major source of export revenue and facilitates the integration of wind power supplies for Hydro-Québec Distribution.

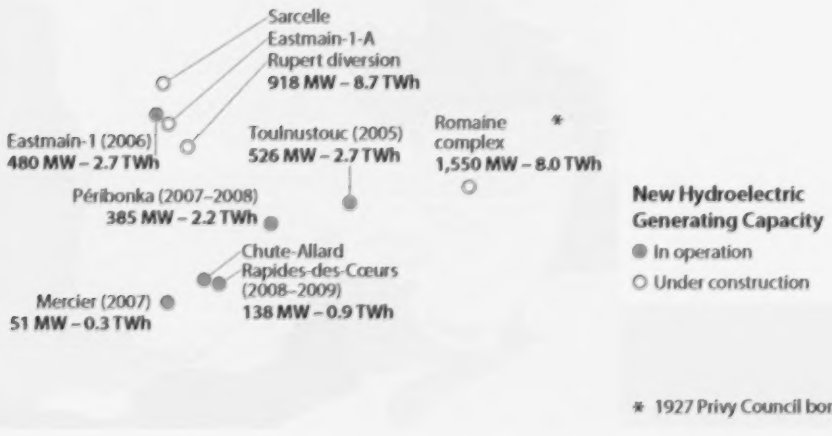
Accordingly, Hydro-Québec will continue to develop Québec's hydropower potential.

Hydro-Québec Production evaluates its projects on the basis of three criteria: they must be profitable, environmentally acceptable and favorably received by local communities. We rely on the expertise of Hydro-Québec Équipement and Société d'énergie de la Baie James (SEBJ) for the design, engineering and construction of our facilities.

The Eastmain-1-A/Sarcelle/Rupert project, the largest and most important construction site at present, will add 8.7 TWh[10] by 2013. The Romaine project, which got under way in May 2009, will add 0.7 TWh in 2014 (with the gradual commissioning of Romaine-2 generating station) and a total of 8.0 TWh once work is complete in 2020.

By 2013, the installed capacity of our hydroelectric generating fleet will be nearly 1,000 MW greater than in 2008. Most of this increase will correspond to the capacity of Eastmain-1-A powerhouse (768 MW). Sarcelle powerhouse will provide an additional 150 MW and refitting at La Tuque will result in gains of 38 MW.

10. For details on power generation projects, see: www.hydroquebec.com/projects/index.html.



Strategy 1 – Bring the Rupert diversion as well as Eastmain-1-A and Sarcelle powerhouses on stream as quickly as possible.

Together with Hydro-Québec Équipement and SEBJ, Hydro-Québec Production is pursuing its efforts to optimize project construction schedules. The early commissioning of Toulnustouc (2005), Eastmain-1 (2006) and Péribonka (2007–2008) generating stations are models in this regard.

We therefore plan to bring the Rupert diversion on stream at the end of 2009, Eastmain-1-A powerhouse in fall 2011, and then Sarcelle powerhouse in spring 2012, all within the $5-billion budget planned for the work.

Strategy 2 – Carry out the Romaine hydroelectric project.

In May 2009, Hydro-Québec broke ground on a 1,550-MW hydroelectric complex on the Romaine, north of the 49th parallel, in the Minganie region. This project involves the construction of four generating stations with an average annual output of 8 TWh, and a 150-km permanent road linking the facilities to highway 138. Construction will take place from 2009 to 2020, with the first generating station (Romaine-2) scheduled for commissioning in late 2014.

The Romaine complex will enable Hydro-Québec Production to increase its exports to markets outside Québec.

Main Projects Under Way

	Energy (TWh)	Installed capacity (MW)	Commissioning
Construction			
Eastmain-1-A/Sarcelle/Rupert	8.7	918	2009–2012
Refitting (capacity gains)			
La Tuque	–	38	2008–2009
Total – 2013 horizon	**8.7**	**956**	
Romaine complex	8.0	1,550	2014–2020
Total – 2020 horizon	**16.7**	**2,506**	

The Romaine project will generate substantial spinoffs for the Minganie and Côte-Nord regions, and for the overall Québec economy. Expenses directly related to construction (contracts and purchases of goods and services) will amount to $3.5 billion in Québec, including $1.3 billion for the Côte-Nord region. An estimated 33,410 person-years of employment in Québec will be created or sustained by the project, with an average of 975 jobsite workers per year for 11 years. Between 2012 and 2016, the peak workforce will exceed 2,000 workers, a majority of whom will come from the Côte-Nord.[11]

11. See also Objective 2 for Hydro-Québec TransÉnergie, page 41.

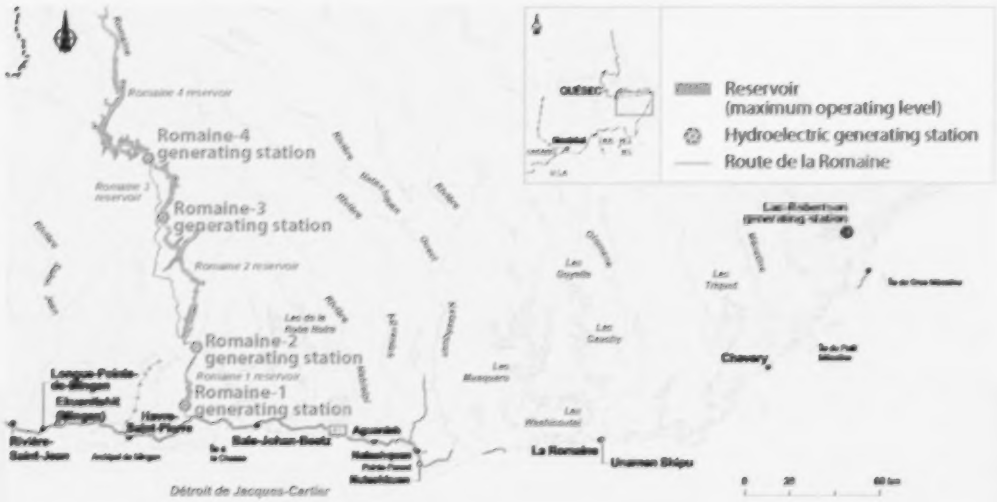
In January 2008, an exhaustive environmental impact statement (2,500 pages), along with 50 background reports, was filed with the government authorities responsible for the environmental assessment of the project. Hundreds of engineers, scientists and local stakeholders, including Innu community members who shared their knowledge of the land and traditional knowledge with us, labored for four years to produce these studies. All components of the physical, biological and human environments likely to be affected were examined. Based on this analysis, mitigation and compensation measures were developed to minimize the project's ecological footprint and allow land users to pursue their activities.

The Romaine project will also include an extensive program of environmental follow-up until 2040. Minganie residents and Innu communities will participate in this program, the aim of which is to determine the effectiveness of the measures implemented and make any necessary adjustments. The estimated cost of the studies, mitigation measures and environmental follow-up is nearly $300 million.

Hydro-Québec has also carried out consultations and discussions with the local people and authorities. The project characteristics and environmental study results were presented to the Innu communities of Ekuanitshit (Mingan), Nutashkuan (Natashquan), Unamen Shipu (La Romaine) and Pakua Shipi (Saint-Augustin). In addition, a public hearing was held in fall 2008.

Romaine Complex

	Energy (TWh)	Installed capacity (MW)	Commissioning
Romaine-2 generating station	3.3	640	end of 2014
Romaine-1 generating station	1.4	270	2016
Romaine-3 generating station	2.0	395	2017
Romaine-4 generating station	1.3	245	2020
Total	**8.0**	**1,550**	



In January 2008, Hydro-Québec Production and the regional county municipality of Minganie signed a partnering agreement with a discounted value of $100 million covering the period from 2009 to 2070, modeled on agreements negotiated for other hydroelectric projects. The aim of the agreement is to maximize project spinoffs for the host region.

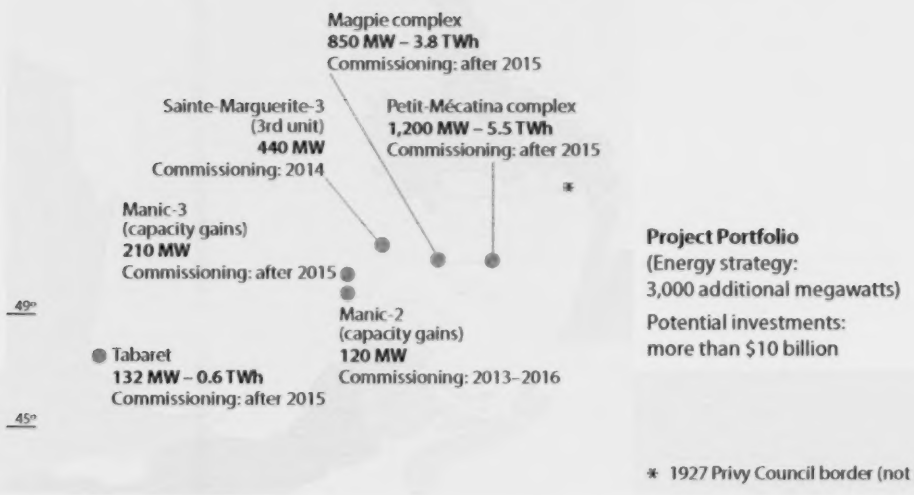
In July 2008, Hydro-Québec and the First Nation of Nutashkuan signed a partnering agreement with a discounted value of $43 million covering the period from 2008 to 2070. Then, in October 2008, the company announced that it had reached an agreement with a discounted value of $14.5 million covering the same period with the communities of Pakua Shipi and Unamen Shipu.

Finally, in March 2009, Hydro-Québec and the community of Ekuanitshit signed a partnering agreement with a discounted value of $75 million covering the period from 2009 to 2070. This agreement had first been approved, by a nearly 80% majority, in a referendum of community members.

Strategy 3 – Develop a portfolio of additional hydroelectric projects, to finish carrying out the energy strategy and to implement the Northern Plan.

In line with the Québec Energy Strategy 2006–2015, Hydro-Québec Production is planning new hydroelectric projects. These will be built beyond the time frame of the *Strategic Plan 2009–2013.*

We are already working on an initial set of projects totaling nearly 3,000 MW in response to the 4,500-MW goal set in the energy strategy, which includes the Romaine complex's 1,550 MW. Most of these projects will entail technical and environmental studies, as well as discussions with the Aboriginal and other communities affected. The construction schedules will take into account power market conditions here in Québec and in neighboring provinces and states.



One of these projects is located on the Petit Mécatina, some 250 km east of the Romaine. The company has already carried out the preliminary studies and some field surveys. Draft-design studies are set to begin in 2009. These will allow us to determine the final configuration, features and cost of the facilities, and carefully assess their environmental impacts. The working hypothesis calls for two generating stations (Petit-Mécatina-3 and Petit-Mécatina-4) with a total capacity of 1,200 MW.

Other projects totaling more than 1,750 MW round out this first group. They include Tabaret generating station, which is planned near Kipawa dam in the Témiscamingue region, and another project to be built on the Magpie; both of these have yet to undergo a detailed environmental assessment. The addition of a third generating unit at Sainte-Marguerite-3 is also being considered, along with refits that would yield capacity gains at Manic-2 (commissioning: 2013 to 2016) and Manic-3 (commissioning: after 2015).

The location and scope of these projects are shown on the map opposite.

The portfolio of additional hydropower projects will include a second block of 3,000 MW linked to the Northern Plan launched by the Québec government in fall 2008. Since the time frame encompassed by this plan extends until 2035, the company will present prospective projects in a future Strategic Plan.

The area covered by the Northern Plan lies north of the 49th parallel. The selected hydropower projects will be the subject of consultations and partnerships with the Aboriginal and other communities concerned. Like all Hydro-Québec projects, they will be based on the company's three criteria for feasibility: they must be profitable, environmentally acceptable and favorably received by local communities.

The Northern Plan also calls for additional power from wind and emerging renewables, bringing the total to 3,500 MW. Wind projects will of course be carried out in phase with hydropower development.

The division will also take this opportunity to evaluate, with the Groupe de la technologie, the feasibility of carrying out projects in northern Québec designed to develop emerging renewable energies such as hydrokinetic power, which uses energy from tides or underwater currents (see Innovation section, page 72).

NORTHERN PLAN –
3,500 MW BY 2035

3,000 MW of hydropower

300 MW of wind power

200 MW of emerging renewables

Strategy 4 – Provide balancing and firming capacity services for the integration of new wind power supplies.

Developing Québec's hydropower potential ensures that the power system will have the capacity and flexibility needed to integrate wind power. Hydro-Québec Production consequently offers balancing and firming capacity services to Hydro-Québec Distribution to offset the variable nature of winds.

The two divisions signed an integration agreement that was approved by the Régie de l'énergie in February 2006. Under this agreement, which runs until 2011, Hydro-Québec Production fills in gaps in wind power supplies contracted by Hydro-Québec Distribution following its initial tender call (990 MW) and guarantees firming capacity equal to 35% of the contractual capacity of wind farms in commercial operation, at a total cost of 0.5¢/kWh. When this agreement expires, the parties will sign a new one to cover the needs associated with all of Hydro-Québec Distribution's wind power supplies, based on the actual output of the wind farms in operation. In the current scenario, Hydro-Québec Production expects to supply firming capacity of a little over 500 MW in the winter of 2015–2016.

Strategy 5 – Optimize the cost of future projects.

Hydro-Québec Production and Hydro-Québec Équipement are exploring new ways to optimize the cost of development projects,[12] particularly in terms of construction methods and procurement of goods and services.

On the Eastmain-1-A site, for example, prefabricated components are being used for much of the powerhouse building and downstream platform. These factory-produced components are transported to the site for assembly—a process that speeds up critical work on the project.

We plan to follow the same procedure for the Romaine project, where other innovations will also be tested to cut the time required for work in the powerhouse as well as overall workforce needs for concreting operations.

12. Close to two-thirds of Hydro-Québec Production's expenses correspond to financing and amortization costs, taxes and royalties.

Objective 2: Step up exports.

Since markets were deregulated in 1999, Hydro-Québec Production has engaged in energy trading in the U.S. Northeast: sales of electricity produced in Québec, purchase/resale operations and price arbitraging. Since the early 2000s, we have also exported electricity to Ontario at market prices. Export revenue totaled $1.9 billion in 2008.

Export sales by Hydro-Québec Production also reduce greenhouse gas (GHG) emissions in northeastern North America. Since 2001, this has meant more than 30 Mt of GHGs avoided on this continent as a result of our exports. Our energy sales help reduce highly polluting thermal generation in areas adjacent to Québec, and thus play an important part in reducing GHGs and combating global warming.

The medium- and long-term outlook for renewable energies like hydropower remains very favorable, since renewables are essential to any economic growth that includes a reduction in GHG emissions. Recent legislative developments in this regard are encouraging, despite the difficult economic situation since fall 2008 and the substantial decline in the price of fossil fuels such as natural gas. In June 2009, the U.S. House of Representatives adopted a bill[13] that will force the major retail electric suppliers to progressively raise the renewables portion of their energy portfolios to 20% with a view to reducing GHG emissions. This is good news for Hydro-Québec and its partners.

As a result of recent and ongoing hydroelectric development projects, Hydro-Québec Production expects to have the generating capacity needed to ensure export growth. By 2013, we will have nearly 24 TWh at our disposal. This margin of flexibility will enable us to increase the volume of our exports. ▶ See Appendix 1, page 30, and Appendix 2, page 32.

Strategy 1 – Increase energy interchanges with Ontario.

The recession currently being felt all over North America has affected industry in central Canada. Electricity demand there has shrunk and market prices are down from their 2008 levels.

Ontario asserts that it will need 20,000 MW by 2030 to meet demand growth, make up for the gradual closing of coal-fired power plants between now and 2014, and ensure an adequate power supply during projects to maintain the generating capacity of its nuclear plants. It has consequently embarked on a major program to upgrade and expand its generating fleet, and an energy efficiency program to curb growth in demand. As a further measure, it is bolstering its interconnection capacities with neighboring systems.

13. *American Clean Energy and Security Act of 2009* (H. R. 2454, Waxman-Markey).

Hydro-Québec Production can rely on its generating stations on the Rivière des Outaouais (Ottawa River) to export electricity to Ontario. Altogether, these facilities provide 1,295 MW in export capacity. In 2008, our sales to the Ontario market totaled $131 million (1.6 TWh). The commissioning of a 1,250-MW interconnection[14] in 2009–2010 will allow us to expand our energy interchanges with that province.

We will then be able to increase our exports at peak times and conduct purchase/resale operations to make the most of our reservoirs' storage capacity. We can also take advantage of greater interconnection capacity with Ontario to make sales on markets in western New York State and the U.S. Midwest.

14. For details on the project components, see sidebar on page 42.

North American Power Markets

Hydro-Québec Production has been present on wholesale markets in the Northeast since 1999, and now wants to extend its sales activities to the U.S. Midwest.

Strategy 2 – Step up exports to New England and New York.

Hydro-Québec inaugurated its first direct-current (DC) transmission line in the early 1990s. The Radisson–Nicolet–Des Cantons line is part of the interconnection with Comerford and Sandy Pond substations in the United States.[15] Under the terms of an agreement with a group of 22 New England power distributors, this 450-kV line carried 70 TWh for a period of 10 years. DC links are particularly efficient for transmitting large quantities of energy over long distances at high voltages. In addition, they facilitate interchanges between unsynchronized alternating-current systems, like those of Québec and other regions in northeastern North America.

In December 2008, Hydro-Québec and the two main power distributors in New England, Northeast Utilities and NSTAR, signed a letter of understanding for a project for a 1,200-MW DC line between Des Cantons substation and a substation yet to be determined in southern New Hampshire.[16] From a technical standpoint, the interconnection will be similar to the DC line commissioned in the early 1990s. The Federal Energy Regulatory Commission (FERC) approved the project's financing structure in May 2009. According to FERC Chairman Jon Wellinghoff, "this project provides access to clean, low-cost energy for consumers in a region [New England] of the country that has tight constraints on electricity supplies."[17] Hydro-Québec Production is currently negotiating agreements to supply electricity, via this transmission line, to these two U.S. distributors and other New England distributors, starting in the middle of the next decade.

Other discussions are under way with State of New York authorities, including the New York Power Authority (NYPA) and the New York Independent System Operator (NYISO), with a view to increasing electricity sales to that market. The State of New York is considering a number of means, including imports of Québec hydropower, to reach its renewable energy goals and GHG emission reduction targets.

15. The Des Cantons–Sandy Pond section of the line went into operation in late 1986.
16. See also Objective 2 for Hydro-Québec TransÉnergie, page 42.
17. FERC Docket No. EL09-20-000, Statement of Chairman Jon Wellinghoff on Northeastern Utilities and NSTAR Electric's Petition for Declaratory Order.

Objective 3: Further enhance the division's performance.

Upward pressure on Hydro-Québec Production's expenses affects the division's profitability since we are paid a fixed price (2.79¢/kWh) for heritage pool electricity, which accounts for 90% of our sales volume. We will continue our initiatives to enhance our performance, maximize facility availability, reduce refurbishment costs, maintain employee know-how and manage succession.

Strategy 1 – Increase the efficiency, availability and flexibility of the generating fleet.

Hydro-Québec Production will take steps to contain the rise in the unit cost of power generation. We will keep up our efforts to manage our facilities efficiently while meeting needs in terms of security of supply, availability and long-term operability.

In tangible terms, we plan to:

- Implement a condition-based maintenance strategy[18] that uses new technologies to monitor equipment condition and performance.
- Apply new technologies, including robotics, to reduce the risks associated with certain operations and simulate mechanical, electrical and hydraulic improvements that will heighten equipment efficiency.
- Plan and operate the generating fleet according to the needs associated with integrating wind power and exporting electricity. To meet this sizable challenge, we must provide balancing services for wind farm output that will eventually exceed 3,500 MW, while keeping the entire fleet running smoothly. We are also involved in research to develop better wind and runoff forecasting technologies.
- Invest over $4 billion by 2013 in refurbishing generating facilities, including Gentilly-2.

We are working with Hydro-Québec's research institute, IREQ, to develop technological solutions to improve our performance and ensure the long-term operability of our facilities. Over the period covered by the Strategic Plan, we will continue our involvement in research to optimize hydroelectric generation. In addition, part of our budget—about $20 million per year—will be earmarked for new technologies designed to yield gains in output.

The average cost of generation and electricity supplies is expected to rise from 2.17¢/kWh in 2008 to 2.39¢/kWh in 2013. Efficiency gains will offset part of the effect of the indexation of certain expenses, including salaries and water-power royalties, overall inflation and additional expenses arising from investments in long-term operability and the commissioning of new generating facilities.

18. As compared with periodic preventive maintenance, which involves scheduled maintenance with or without first determining equipment condition, condition-based maintenance means managing maintenance operations on the basis of the actual condition of the equipment, thereby reducing equipment downtime and maintenance costs.

Strategy 2 – Refurbish Gentilly-2 nuclear generating station.

Gentilly-2 supplies 3%—nearly 5 TWh, for 675 MW of installed capacity—of the total output of Hydro-Québec Production's generating fleet safely and reliably. Due to its geographic location, it plays a key role in the Hydro-Québec power system.

In August 2008, Hydro-Québec announced that it would begin refurbishing the generating station in 2011 in order to extend its service life until 2040, at a total cost of approximately $1.9 billion. The price of the resulting energy will be very competitive. In addition to the refurbishment, this price includes the cost of operating and maintaining the plant until 2040, as well as dismantling facilities and disposing of spent fuel. The plant will be out of service during the refurbishment, which is scheduled for completion in late 2012. A similar project is under way at New Brunswick's Point Lepreau nuclear generating station,[19] where Hydro-Québec has sent a team to learn as much as possible about the process.

The most important aspect of the Gentilly-2 refurbishment is the replacement of several components in the plant's reactor. The work will also involve upgrading the turbine-generator unit and auxiliary systems, which will increase installed capacity to 700 MW. ▶ See Appendix 3, page 33.

In addition, to store the waste that will be produced by the plant's refurbishment, we will expand the Solid Radioactive Waste Management Facility in 2009–2010.

Strategy 3 – Preserve know-how and manage succession.

For optimal facility operation, Hydro-Québec Production must be able to count on a workforce with specialized know-how in a number of skilled jobs.

To attract new employees at a time when skilled workers are in great demand, we are counting on the stimulating job prospects in the field of renewable energy generation. Among other measures, we are encouraging educational institutions to offer courses that take power industry needs into account. We also take on many interns and distribute information on the different job opportunities for skilled workers to schools and to Aboriginal and other communities.

By 2013, 27% of all of Hydro-Québec Production's permanent employees and 40% of management personnel will be eligible for retirement. We will focus special attention on the job categories most affected in the areas of generating fleet development, operation and maintenance. Skill sets considered unique have been listed and are covered by specific succession plans. Tools are being developed to model know-how and thereby provide employees with access to targeted technical information.

We will also take care to manage performance on the basis of our objectives and prepare candidates for management positions.

19. Gentilly-2 is the same size and has the same design as the Point Lepreau facility.

Appendix 1

Hydro-Québec Production's Contribution to Hydro-Québec's Net Income

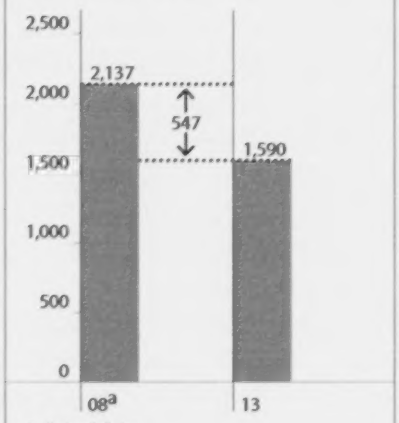
According to *Strategic Plan 2009–2013* forecasts, Hydro-Québec Production's contribution to Hydro-Québec's net income will be $1,590 million in 2013, down $547 million from 2008, a year in which conditions were particularly favorable on markets outside Québec.

Hydro-Québec Production's contribution to net income is driven by three main factors:

- Average cost of generation
- Revenue from special contracts with certain large industrial customers in Québec
- Export revenue, which in turn depends on exchange rates (US$/C$) and market prices

The main revenue for the division, which comes from supplying heritage pool electricity to the Québec market, will remain stable at $4.6 billion a year for 2009–2013 because heritage pool electricity has been sold at a fixed price of 2.79¢/kWh[20] since 2000.

Hydro-Québec Production's Net Income ($M)



a) Actual data.

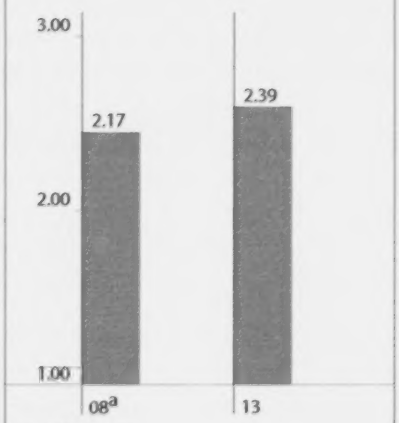
Average cost of generation

Hydro-Québec Production's average cost of generation and electricity supplies will rise slightly over the Strategic Plan period, from 2.17¢/kWh in 2008 to 2.39¢/kWh in 2013. This increase is mainly attributable to inflation and the indexing of certain expenditures, including water-power royalties, which will rise from $552 million in 2008 to $642 million in 2013.

The average cost of generation will also increase with the commissioning of generating facilities whose costs are higher than historical costs.

As a result, the cost of generation and electricity supplies for the division will rise by $620 million between 2008 and 2013.

Average Cost of Generation (¢/kWh)



a) Actual data.

20. In addition to the cost of electricity supplies, customer rates include distribution and transmission costs.

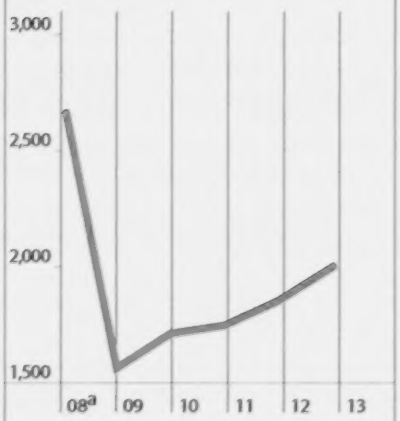
Revenue generated by special contracts with certain large industrial customers

Some of the power distributed in Québec is sold to industrial customers in Québec at a rate indexed to the price of aluminum, calculated in U.S. dollars.

Hydro-Québec Production assumes the financial risk for these sales. Net income from such sales is integrated into its financial results, namely revenue less the cost of electricity supplies and related transmission costs.

Given the forecasted drop in the price of aluminum and the anticipated appreciation of the Canadian dollar in relation to the U.S. dollar, Hydro-Québec Production expects net income from those industrial sales in Québec to be $135 million lower in 2013 than in 2008.

Price of Aluminum – Midwest (US$/tonne)



a) Actual data.

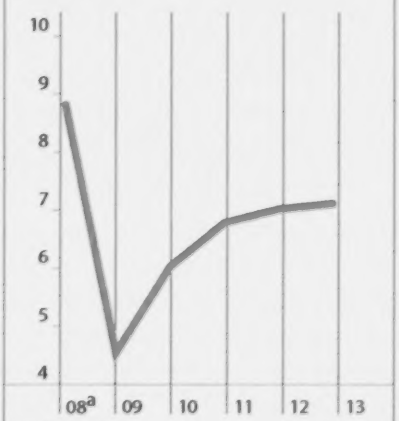
Export revenue

Net export revenue in 2013 will be up $359 million from 2008, as a result of the higher export volume. Average selling prices will be down from levels in 2008, when market conditions were particularly favorable. Export transmission costs will increase by $151 million during the 2008–2013 period.

On markets outside Québec where Hydro-Québec is active, the price of electricity largely depends on the price of natural gas, given the importance of combined-cycle gas turbine generating stations on these markets. The main cost of operating these generating stations is the purchase price of the natural gas used as fuel.

In 2009, gas prices plunged from the peaks reached in 2008. Hydro-Québec Production expects prices to remain below US$8/MBtu over the entire Strategic Plan period and has established its revenue forecast accordingly.

Price of Natural Gas – Henry Hub (US$/MBtu)



a) Actual data.

Summary ($M)

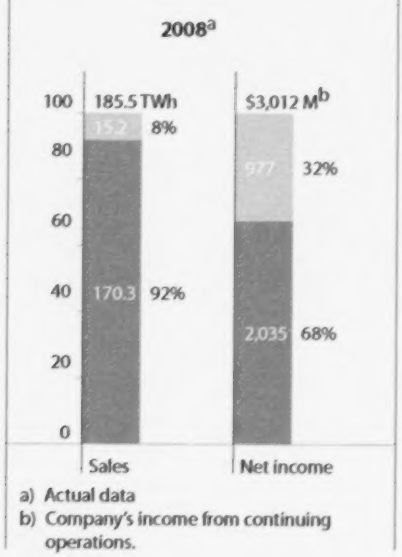
Net income 2008 – Hydro-Québec Production	**2,137**
Increase in cost of generation	(620)
Decrease in revenue from special contracts in Québec	(135)
Increase in revenue from net exports (including transmission costs)	208
Net income 2013 – Hydro-Québec Production	**1,590**

Appendix 2

Contribution of Exports to Hydro-Québec's Net Income

In 2008, Hydro-Québec Production's net exports accounted for 8% of sales volume and generated income of $977 million, or 32% of the company's net income.

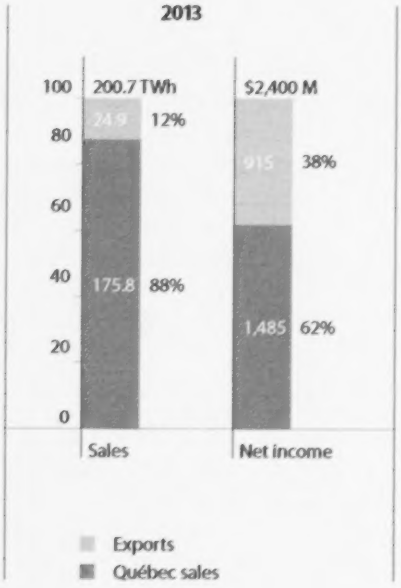
Contribution of Exports to Hydro-Québec's Net Income, by Market



a) Actual data
b) Company's income from continuing operations.

In 2013, Hydro-Québec Production's net exports will account for 12% of sales volume and generate income of $915 million, or 38% of Hydro-Québec's net income.

Export income will be down by $62 million in 2013 from 2008, a year in which particularly favorable market conditions prevailed. Export volume will increase significantly over the period while the average price of exports will fall, given the forecasted price of natural gas, the main fuel used in power generation on Hydro-Québec's export markets (see Appendix 1).



Appendix 3

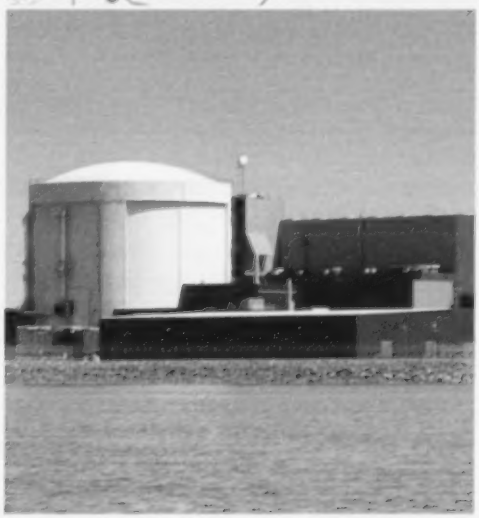
Refurbishment of Gentilly-2 Generating Station

Background

In August 2008, Hydro-Québec announced that it would move ahead with the refurbishment of Gentilly-2 nuclear generating station, at a total cost of $1.9 billion. A reliable, non-intermittent source of power located close to major load centres in the Vallée du Saint-Laurent, this 675-MW facility also plays a valuable role in ensuring the stability and reliability of the Hydro-Québec transmission system.

The decision to refurbish was made following thorough assessments of the plant's operating systems. These draft-design studies, approved by the Hydro-Québec Board of Directors in 2001, took nearly eight years and cost approximately $160 million, which is included in the total project cost.

Following detailed technical studies conducted in preparation for the refurbishment, a number of recommendations were put forward in the inspection reports for about a hundred operating systems in the plant and 35 sets of generic equipment that are shared by multiple systems. The exact scope and cost of the project were then defined by the Gentilly-2 team of specialists, together with professionals from Hydro-Québec Équipement and outside experts. Their primary goal was to maintain facility safety and plant system reliability.



Two key contracts

Hydro-Québec Équipement, the prime contractor for the company's major hydropower and transmission projects, will be in charge of the project overall. This division will contribute its expertise in procurement planning and work scheduling, workforce management, the jobsite health and safety program, and contract management.

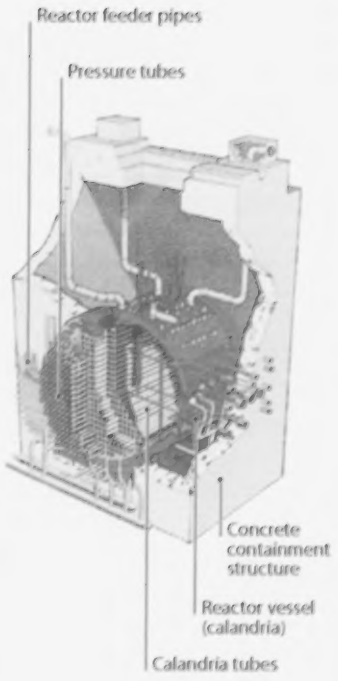
Two important aspects of the refurbishment are covered by fixed-price contracts:

- Replacement of the reactor core
- Refurbishment of the steam turbine-generator unit, which produces electricity from the heat released by the reactor

Atomic Energy of Canada Limited (AECL), designer of the CANDU technology used in Gentilly-2, will look after replacing the reactor core: pressure tubes, calandria tubes and feeder pipes. AECL will also work with the refurbishment team until the final recommissioning and return to the Hydro-Québec grid.

GE Energy will be responsible for refurbishing the turbine-generator unit—in particular, replacing the two low-pressure rotors in the turbine and the rotor windings in the 675-MW generator, the most powerful in the Hydro-Québec fleet. GE Energy is the original manufacturer of the generating unit and has been involved in its maintenance since it first went into operation.

AECL and GE Energy are very well known, highly specialized in their respective fields, and both technically and financially solid. A substantial portion of the direct costs of the generating station refurbishment was set in the contracts signed with them. **Under the terms of these contracts, a significant share of the project's risks is assumed by these world-renowned companies.**



Decommissioning requirements

In compliance with regulatory requirements, Hydro-Québec files a preliminary decommissioning plan with the Canadian Nuclear Safety Commission (CNSC) every time it applies to renew the plant's operating licence. This plan covers both the dismantling of the Gentilly nuclear complex and the removal of spent fuel.

Since 2001, Hydro-Québec has hired the American firm TLG Services, which specializes in this area, to estimate the dismantling costs. TLG produces cost estimates for all Canadian nuclear generating facilities and 85% of U.S. facilities. We are therefore benefiting from the expertise it has acquired over the years.

Hydro-Québec's financial statements reflect the cumulative funding of liabilities in anticipation of decommissioning. In the company's *Annual Report 2008*, these figures are provided in Note 13 to the Consolidated Financial Statements (pages 90 and 91).

The preliminary plan assumes that, in the final phase of decommissioning, Hydro-Québec will dispose of all potential sources of radiation and risk off-site. This hypothesis is in line with the approach followed by the Nuclear Waste Management Organization (NWMO), established in 2002 at the request of the federal government and made up of the Canadian nuclear power producers.

To fulfill its legal obligations related to the removal of spent fuel, Hydro-Québec set up a trust fund in 2002. It makes annual contributions to this fund to finance the long-term storage of bundles of fuel used to generate electricity at Gentilly-2 (see Note 11 to Hydro-Québec's Consolidated Financial Statements in its *Annual Report 2008*, page 88).

Finally, since 2002, the CNSC has required a financial guarantee for decommissioning at the end of the plant's service life. This guarantee, the amount of which is based on the total cost of carrying out the most up-to-date decommissioning plan at the time the operating licence is renewed, is provided by the Québec government on behalf of Hydro-Québec.

A competitive cost

During its second life cycle, which will extend from the end of 2012 until 2040, Gentilly-2 will generate nearly 135 billion kilowatthours of reliable, non-intermittent, zero-emission power. This output represents nearly $10 billion in constant 2012 dollars, based on a unit cost of 7.2¢/kWh (also in constant 2012 dollars).

This competitive cost, which was a determining factor in the decision to go ahead with the refurbishment, corresponds to the difference between the discounted cash flows of the following two scenarios: the scenario of a 2011 retirement, which called for operations and output to end in March 2011, and the refurbishment scenario, which factored in the $1.9-billion investment required, plus operating and maintenance costs until 2040. In both cases, all costs of dismantling the generating station and removing spent fuel were taken into account. The difference between the scenarios is thus essentially attributable to the start date of the decommissioning phase (2011 versus 2040).

Economic spinoffs

Operation of Gentilly-2 generates direct spinoffs of approximately $100 million a year in the Mauricie and Centre-du-Québec regions. The refurbishment will allow these spinoffs to be sustained.

In addition, the refurbishment project will have spinoffs of about $600 million in Québec as a whole, including one-third regionally. The refurbishment alone will create some 800 jobs over a 20-month period, on top of the plant's current workforce. Hydro-Québec will continue to work with the regional economic spinoffs committee to maximize the benefits of the project.

Outaouais substation

Hydro-Québec TransÉnergie

Objectives

1. Ensure the quality of power transmission service.
2. Increase transmission system capacity to meet customers' needs.
3. Further enhance the division's performance.

Indicators

- Investments planned and carried out ($B)
- New generating capacity brought onto the grid (MW relative to list of projects)
- Additional transmission capacity (MW)
- Continuity of transmission service—normalized system average interruption duration per customer per year (minutes)

Financial Outlook ($M)	2008 (actual)	2009 (projected[a])	2010	2011	2012	2013	Total 2009–2013
Contribution to company's income	481	368	338	374	436	467	1,983
Investments	1,097	1,231	1,231	1,752	1,662	1,946	7,822

a) Projections based on actual data for the first four months of 2009.

Objective 1: Ensure the quality of power transmission service.

Hydro-Québec TransÉnergie operates the largest power transmission system in North America, with roughly 33,000 km of lines and over 500 substations. In addition, the system includes 15 interconnections[21] allowing energy interchanges with the Maritime provinces, Ontario and the U.S. Northeast. We rely on Hydro-Québec's telecommunications network to ensure that our transmission facilities operate efficiently.

In the period between the 1970s and the early 1990s, Hydro-Québec invested substantial amounts in developing the transmission system to meet growth in native load and integrate significant new generating capacity. Subsequently, investments decreased since few new generating stations were commissioned and system capacity was sufficient to meet customers' needs.

Over the next five years, the division plans once again to make major capital investments. A number of generating facilities must be brought onto the grid for both native load supply and electricity exports.

Moreover, a number of transmission facilities are operating at full capacity. And since several of these facilities came on stream in the 1970s, they require extensive refurbishment to ensure their long-term operability.

Over the period from 2009 to 2013, Hydro-Québec TransÉnergie therefore plans to invest $7.8 billion to ensure the development and long-term operability of its transmission facilities, so that it can continue to meet its customers' needs in terms of quality and reliability. ▶ See Appendix 4, page 45.

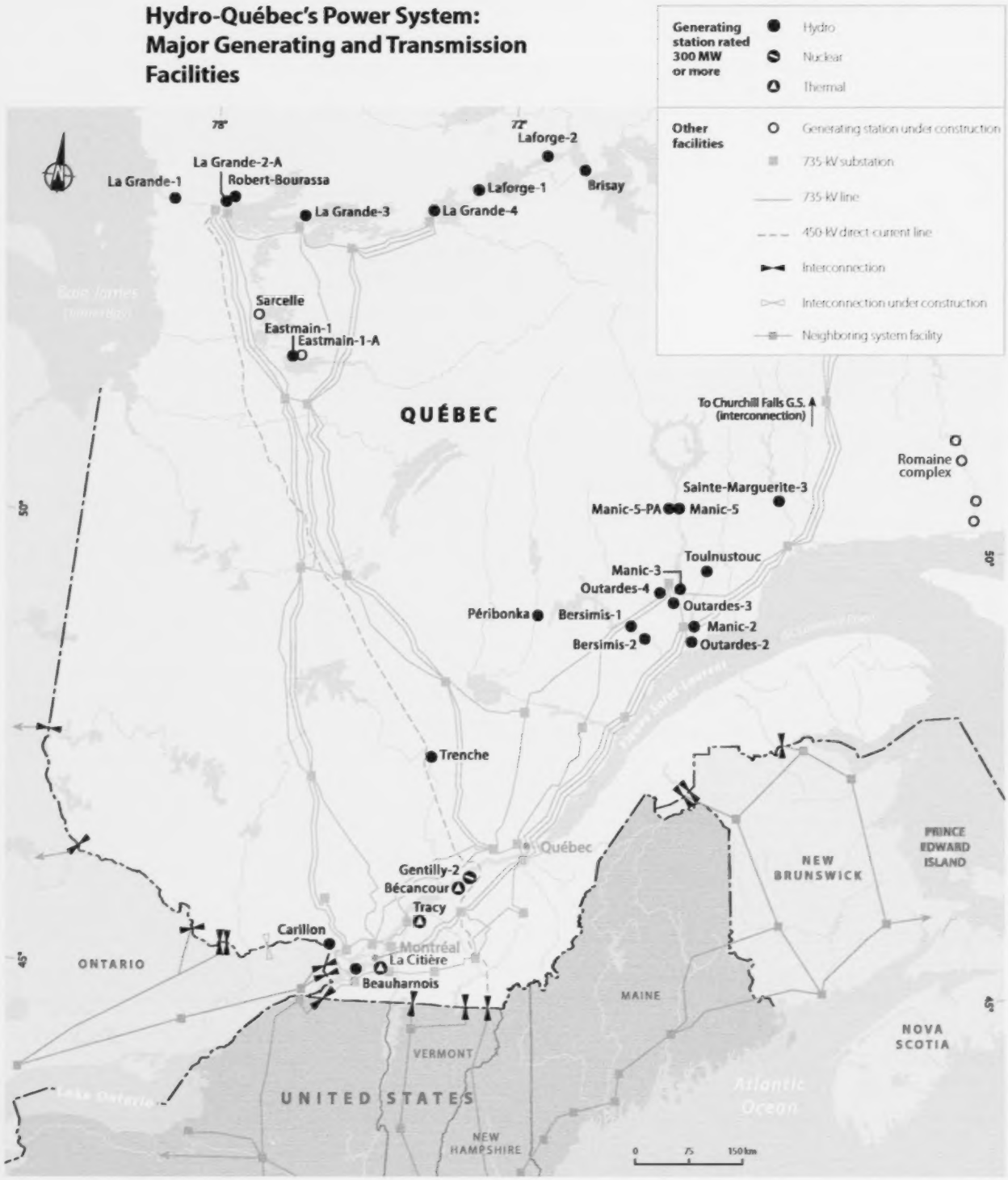
Strategy 1 – Ensure the long-term operability of facilities through targeted investments.

Hydro-Québec TransÉnergie will invest approximately $3.7 billion between 2009 and 2013 to ensure the long-term operability of its facilities.

The division has adopted a long-term operability strategy designed to maintain transmission service quality while also targeting our priority investments. This strategy takes advantage of the latest technological advances. It is based on managing risks according to the probability of equipment failure and the impact of any such failures on the transmission grid. It enables us to prioritize projects in the light of these risks and make the best possible use of human and financial resources.

21. For more information on the transmission system, see: www.hydroquebec.com/transenergie/en/reseau/bref.html.

Hydro-Québec's Power System: Major Generating and Transmission Facilities



Our system maintenance strategy is currently being updated to reduce costs and equipment outage time. We are moving from scheduled maintenance to condition-based maintenance, in other words, maintenance determined by the condition of the equipment. This new approach relies on digital remote-maintenance technologies (remote monitoring, telemetering and remote diagnostics) that will enable us to better target our maintenance operations and perform some of them remotely. It was with this in mind that we launched the IMAGINE project, based on the use of automated maintenance and remote monitoring data management.

Strategy 2 – Ensure system reliability and availability.

Hydro-Québec TransÉnergie will maintain a high level of system reliability in accordance with the standards of the North American Electric Reliability Corporation (NERC) and the Northeast Power Coordinating Council (NPCC).

In 2005, in the wake of the August 2003 blackout that affected 50 million people in Ontario and the states of New York, Michigan and Ohio, the U.S. government adopted the *Energy Policy Act*. This legislation provides for the creation of mandatory reliability standards with fines for noncompliance. New entities called Electric Reliability Organizations (EROs) are responsible for developing the standards and enforcing them, thereby ensuring compliance by all North American power systems. NERC was granted ERO status by the Federal Energy Regulatory Commission (FERC) in 2006 and requested similar status from provincial regulatory bodies in Canada.

In August 2007, the Régie de l'énergie designated Hydro-Québec TransÉnergie's Direction du contrôle des mouvements d'énergie (system control unit) as Reliability Coordinator for Québec. One of this unit's responsibilities was to submit NERC's reliability standards to the Régie so that they could be applied under the mandatory standards system. The unit filed the standards with the Régie in May 2009 in preparation for their adoption; it also submitted the grid for applying these standards and an evaluation of their relevance and impact.

Projet **imagine**
La maintenance à l'ère numérique

To improve transmission system management efficiency, Hydro-Québec TransÉnergie launched a project called IMAGINE, based on the use of automated maintenance and remote monitoring data management.

Remote-maintenance technologies such as remote monitoring, telemetering and remote diagnostics will enable us to gain better knowledge of the condition and performance of our equipment and move from scheduled maintenance to condition-based maintenance.

We connected eight substations to a remote maintenance centre in 2008 and plan to connect another 30 in 2009. Most of our substations should be similarly linked within the next 10 years.

The Régie, for its part, reached an agreement with NERC and the NPCC in May 2009 to obtain their assistance in setting up the mandatory system of reliability standards in Québec and in introducing a program for overseeing compliance with the standards.

During the numerous modernization, maintenance and development projects planned between now and 2013 to maximize the availability of a system that is already heavily used, we intend to improve the quality of customer load forecasts. In addition, we will plan downtimes of major equipment by adopting a multiyear rather than annual cycle.

Service reliability and quality are important issues given the current reality of changing customer loads. To comply with prescribed voltage limits in spite of increased fluctuations in load, we will enhance performance on the bulk transmission grid by adding dynamic compensation until 2012. Construction of a new transmission line linking the northeastern Québec grid to the metropolitan loop is also being considered in order to bolster energy supply to major load centres, reduce energy losses and improve system management flexibility.

Finally, we will continue to integrate Hydro-Québec Distribution's wind farm output forecasts into our operating data to allow the transmission of as much wind power as possible.

Objective 2: Increase transmission system capacity to meet customers' needs.

Hydro-Québec TransÉnergie will continue to develop the transmission system between 2009 and 2013 to meet growing demand for capacity. We will bring 3,000 MW of new generating capacity onto the grid, commission the 1,250-MW interconnection with Ontario and break ground on a 1,200-MW interconnection with New England. Integrated asset planning on a 10-year cycle will enable us to carry out the appropriate projects at the opportune time and at the lowest cost.

Strategy 1 – Invest to meet growing needs.

Over the period from 2009 to 2013, we will work with Hydro-Québec Équipement to carry out development projects worth about $4.1 billion altogether. We will integrate the output of hydroelectric generating stations currently under construction, including Eastmain-1-A and Sarcelle powerhouses, and begin to expand our system in the Minganie region, primarily to connect the Romaine generating stations to the grid for Hydro-Québec Production. As well, for Hydro-Québec Distribution, we must bring approximately 2,400 MW of wind farm output reliably onto the grid by 2013.

In addition, we plan to increase the transformer capacity of seven satellite substations[22] and build five new 120-kV or larger substations to handle growing electricity demand in Québec.

Lastly, we will roll out leading-edge technologies and update a portion of our telecommunications equipment.

22. Transmission system substations that supply a distribution system.

Strategy 2 – Increase the transmission capacity of interconnections.

We will continue our initiatives to increase interconnection capacity with the U.S. Northeast and neighboring Canadian provinces.

The new interconnection with Ontario (1,250 MW) will be commissioned in 2009–2010, as scheduled. To achieve this, we will complete construction of Outaouais substation and the extension of the 230-kV line to Ontario in 2009, which will increase our interchange capacity with neighboring systems. Completion of the 315-kV Chénier–Outaouais line will follow in 2010.

Furthermore, subject to confirmation of requests for transmission services, we plan to build a 1,200-MW interconnection with New England by 2014. In May 2009, FERC handed down a decision in favor of the financing structure for the U.S. portion of the transmission project. In Québec, we will consult with the local communities concerned with a view to optimizing the line route.

We also plan to upgrade the New York interconnection (Châteauguay substation). With import and export capability, this interconnection plays a major role in energy interchanges between Québec and the United States. We will coordinate the work with the U.S. operators to reduce impacts on service.

We are considering other projects to ensure long-term operability and are keeping up our efforts to maintain or increase the exploitable capacity of all our interconnection facilities. We will increase our participation on technical committees with the operators of neighboring power grids and continue to make representations on joint operating rules and reliability standards for interconnected transmission systems.

NEW INTERCONNECTION WITH ONTARIO

Following the signing by Hydro-Québec Production of a long-term transmission service agreement, Hydro-Québec TransÉnergie and Hydro One Networks entered into an agreement for the construction of a 1,250-MW interconnection between Québec and Ontario. This project, which got under way in December 2006, has three main components:

- 315/230-kV Outaouais substation
- 230-kV line to Ontario
- 315-kV Chénier–Outaouais line

Hydro-Québec Production has contracted for the capacity of the new interconnection for a 50-year period. This will enable it to sell clean, renewable energy according to the conditions prevailing on neighboring markets. The interconnection's import capacity will also increase the reliability of the Québec grid.

Objective 3: Further enhance the division's performance.

Strategy 1 – Continue to improve performance.

In a decision handed down in March 2009,[23] the Régie de l'énergie said that it welcomed Hydro-Québec TransÉnergie's efforts to implement its approach to improving efficiency. The division plans to continue its work in this regard.

Between 2009 and 2013, we will reduce annual increases in our operating expenses and optimize our investments, in line with the expectations of the Régie de l'énergie.

To achieve these efficiency objectives, we will fine-tune our practices in the course of the day-to-day management of our activities. For example, in the area of maintenance, we will review standards and emphasize operational planning to reduce costs. We will also work with our suppliers to limit procurement costs.

In addition, we will continue to roll out new remote maintenance and monitoring technologies to yield further efficiency gains.

Strategy 2 – Optimize investments in a context of strong growth.

Investments in power transmission will increase substantially between 2009 and 2013. We will work closely with Hydro-Québec Équipement to ensure the success of our large-scale investment program.

Through integrated asset planning over a 10-year horizon, we will be able to coordinate a wide range of operations and implement the solutions required to ensure the long-term operability of the system and keep up with demand growth at the lowest cost.

To be able to respond to a strong increase in demand on a transmission system that is more and more heavily used, we will also review our work methods in order to limit equipment outage time.

Project portfolio management will be used to oversee our investments. This approach involves selecting the best set of projects, taking the long-term operability of facilities into account and establishing rigorous monitoring and accountability procedures. We are already applying project portfolio management to capital investments related to static var and synchronous compensators, automatic protection and digital control systems, the integration of wind farms built under the tender calls by Hydro-Québec Distribution and the upgrade of the regional grid serving the Communauté métropolitaine de Québec.

23. See: www.regie-energie.qc.ca/audiences/decisions/D-2009-015.pdf (in French only).

Strategy 3 – Base innovation efforts on four promising avenues.

Over the period from 2009 to 2013, Hydro-Québec TransÉnergie will devote $21 million annually to developing or adapting innovations to improve its performance. Numerous projects will be undertaken in collaboration with Hydro-Québec's research institute, IREQ.

Innovation efforts will focus on the following four promising avenues:

- Efficient management of the maintenance and long-term operability of facilities (e.g., detection of discharges and hot spots in power transformers)
- Optimal grid development using new technologies (e.g., development of out-of-step protective relays and local instability detection to improve system performance)
- Efficient system management and reliability (e.g., more accurate control tools)
- Quality and reliability of wind power integration (e.g., modeling of wind farms for system studies)

Strategy 4 – Maintain expertise and develop employees' skills.

Between now and 2013, about 30% of Hydro-Québec TransÉnergie personnel will retire. This will affect all activities and job categories. Consequently, ensuring succession planning and preserving expertise are major issues for the division.

We will concentrate our efforts on the job categories most at risk in our sphere of operations: engineers, line workers, protection and control system technicians, and system operations personnel. In addition, we will develop skill profiles based on the new technologies and the expertise required to achieve our objectives.

To increase motivation among management, we will focus on preparing candidates for management positions, fostering continuous skills development and managing performance in accordance with our needs and objectives.

Appendix 4

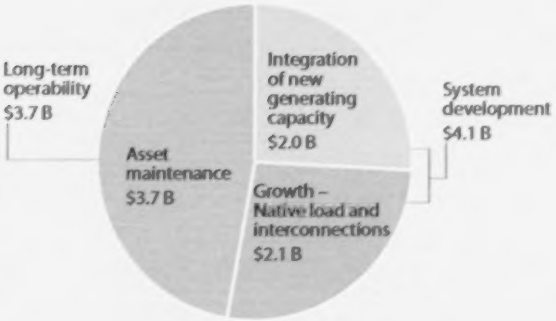
Investment Program 2009–2013
Hydro-Québec TransÉnergie

Over the next five years, Hydro-Québec TransÉnergie plans to invest $7.8 billion to ensure the development and long-term operability of its transmission system.

Long-Term Operability – Asset Maintenance

Main projects

Upgrade of bulk transmission system	$220 M
Interconnection with New York (overhaul of Châteauguay substation)	$88 M
Refurbishment and overhaul of static var and synchronous compensators	$117 M
Montcalm substation (reconstruction)	$89 M
Bourassa substation (reconstruction)	$62 M
Sorel substation (refurbishment)	$36 M
Neubois substation (reconstruction)	$33 M
Rivière-des-Prairies substation (refurbishment)	$32 M
Chelsea substation (refurbishment)	$30 M
Rapides-Farmer substation (reconstruction)	$30 M



System Development

Integration of new generating capacity

Main projects

Wind farms resulting from 1st tender call (990 MW)	$395 M
Wind farms resulting from 2nd tender call (2,005 MW)	$897 M
Expansion of transmission grid in the Minganie region	$414 M
Eastmain-1-A and Sarcelle powerhouses	$169 M
Additional capacity at existing generating stations	$69 M

Growth – Native load and interconnections

Main projects

Construction of 1,250-MW interconnection with Ontario	$251 M
Construction of 1,200-MW interconnection with New England	$406 M
Connection of large industrial customers	$141 M
Construction of Charlesbourg substation (230/25 kV)	$79 M
Construction of Anne-Hébert substation (315/25 kV)	$75 M
Construction of Bout-de-l'Île substation (735/315 kV)	$70 M
Construction of Saint-Janvier substation (315/25 kV)	$66 M
Construction of Mont-Tremblant substation (120/25 kV)	$36 M

Underground system maintenance

Hydro-Québec Distribution

Objectives

1. Ensure the quality of customer services.
2. Step up energy efficiency efforts.
3. Meet electricity needs in a flexible manner.
4. Further enhance the division's performance.

Indicators

- Satisfaction index for residential, commercial and business customers (scale of 10)
- Average telephone response time (minutes)
- Energy savings achieved since implementation of Energy Efficiency Plan, with a target of 11 TWh by 2015 (TWh)
- Net operating expenses (distribution system and customer services) per service contract—average annual growth over a five-year period (%)
- Continuity of distribution service—normalized system average interruption duration per customer per year (minutes)

Financial Outlook ($M)	2008 (actual)	2009 (projected[a])	2010	2011	2012	2013	Total 2009–2013
Contribution to company's income	421	229	268	270	287	328	1,382
Investments	900	1,044	1,138	1,179	1,383	1,482	6,226

a) Projections based on actual data for the first four months of 2009.

Objective 1: Ensure the quality of customer services.

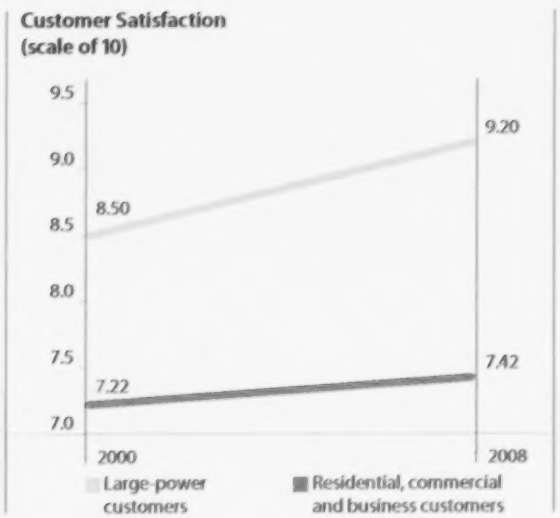
Hydro-Québec Distribution is committed to providing high-quality services to its customer base, made up of nearly 3.9 million service contracts. The consumption patterns of the various customer categories give rise to different expectations regarding service.

Strategy 1 – Provide customers with quality services suited to their needs.

Hydro-Québec Distribution continues to adapt its services according to customers' expectations. Improving access to services remains a priority. We are aiming for a telephone response time comparable to the North American industry average. To achieve this, we will expand the range of self-serve options (online and interactive voice response services) and continue to optimize the organization of activities to improve the customer experience and facilitate first-call resolution. In addition, for our 1,100 major business account holders, we will work to personalize customer relations. These customers, who are the largest consumers of electricity after large-power customers, will have access to an assigned account manager.

In 2008, the satisfaction of residential, commercial and business customers rose to 7.42 out of 10, the highest level recorded since 2000. The division intends to continue this trend and has set a target of 7.50 for 2013.

Hydro-Québec Distribution will continue to work on reforming its rate structures to encourage consumers to be more energy-efficient. The spread between rate tiers for residential customers will be widened, while the tapered rates offered to business and commercial customers will be gradually discontinued.



In accordance with the Québec Energy Strategy 2006–2015, we submitted a project to test time-of-use rates based on season and time of day to the Régie de l'énergie. The "Time It Right" pilot project was approved by the Régie in February 2008.[24] Launched in December 2008, this project runs until March 2010 and involves roughly 2,200 residential customers in Saint-Jean-sur-Richelieu, Sept-Îles, Val-d'Or and Trois-Rivières. It will enable the division to assess customers' interest in time-of-use rates and to measure the impact of such an option on consumption patterns. Based on an analysis of the results of the pilot project, the division will decide whether to offer a time-of-use rate option to a greater number of residential customers. The preliminary results seem to indicate that the gains achieved by participants are modest.

Strategy 2 – Improve the overall reliability of the distribution system.

Hydro-Québec Distribution will step up the renewal of its assets. To ensure the long-term operability and efficiency of the distribution system, the division plans to invest $1.1 billion during the 2009–2013 period. We are also pursuing our efforts to reduce the duration of service interruptions and the number of customers affected. The target for 2013 is for a system average interruption duration of less than 110 minutes for all of Québec, compared with an average of 126 minutes for 2004–2008.

We also intend to increase the number of customers served by reinforced power lines and to boost vegetation control efforts in order to reduce the impact of climate on service reliability.

Hydro-Québec Distribution plans to complete its system automation program, approved by the Régie de l'énergie in July 2005, by 2012. This roughly $200-million investment aims to reduce the percentage of customers whose annual interruption duration is greater than 240 minutes from 13% to 7%. By the end of the program, 3,750 pieces of remote-controlled equipment will be installed on the system, providing for remote detection of outages and faster service restoration. The division is currently assessing the possibility of extending this program to the entire system.

Strategy 3 – Continue to provide help for low-income customers.

For a number of years, low-income customers having difficulties paying their bills have been able to enter into payment arrangements adapted to their means with Hydro-Québec Distribution. We also have a clear policy of not cutting off service during the winter to the principal residences of residential customers heating with electricity who fail to pay their bills. This policy is maintained.

Furthermore, new services and custom-tailored approaches will be developed to avoid having to cut off service outside the winter period for low-income households. In conjunction with organizations working with this clientele—namely the Coalition des associations de consommateurs du Québec (CACQ), Équiterre, Option consommateurs and the Union des consommateurs—we will offer arrangements including financial support for payment of overdue amounts to households meeting specific criteria.

24. See Decision D-2008-024 handed down by the Régie de l'énergie: www.regie-energie.qc.ca/audiences/decisions/D-2008-024.pdf (in French only).

Objective 2: Step up energy efficiency efforts.

Bolstered by the success of the Energy Efficiency Plan (EEP), Hydro-Québec Distribution will continue to build on its energy efficiency programs while improving the system's energy performance. We will step up our energy efficiency efforts to compensate for the effects of a difficult economic climate, particularly in 2009 and 2010.

Strategy 1 – Achieve 11 TWh in energy savings by 2015.

By 2015, Hydro-Québec Distribution will have invested some $3.5 billion to achieve savings of 11 TWh. For 2009, we have earmarked $280 million for this objective. This amount was approved by the Régie de l'énergie in March 2009.

In spring 2010, Hydro-Québec Distribution will submit the CATVAR project to the Régie de l'énergie for approval. The project, which is slated for 2010–2015, is designed to improve the system's energy performance through closer voltage regulation on certain lines. It could generate close to 2 TWh in energy savings by 2015, for an investment of roughly $200 million.

Under the company's energy efficiency programs, particular attention will be paid to commercial and business customers. Hydro-Québec Distribution will intensify its marketing efforts to promote the adoption of energy-saving measures tailored to these markets. We will adjust the terms of the Empower programs to encourage greater participation and adopt an approach better suited to the specific needs of business and commercial customers, particularly small businesses. In addition, the annual ENERGY WISE Competition of Excellence, established in 2008, recognizes the efforts of business customers and partners who carry out energy efficiency projects of exceptional quality.

THE CATVAR PROJECT ON VOLTAGE AND REACTIVE POWER CONTROL

Tests carried out at Pierre-Boucher substation on Montréal's south shore in 2005–2006 showed that the distribution system's energy efficiency could be improved without detriment to service quality by maintaining voltage delivered to customers near the threshold of the applicable standard.

The CATVAR project has two components designed for this purpose: installation of a servo-controlled system that automatically regulates the voltage leaving a substation based on end-of-line measurements; and installation of remotely controlled capacitor banks that reduce system losses and reactive power sent over the lines. Both components will be tested in a pilot project on Montréal's south shore. When the project is completed, Hydro-Québec Distribution plans to use this technology on several other lines in its system.

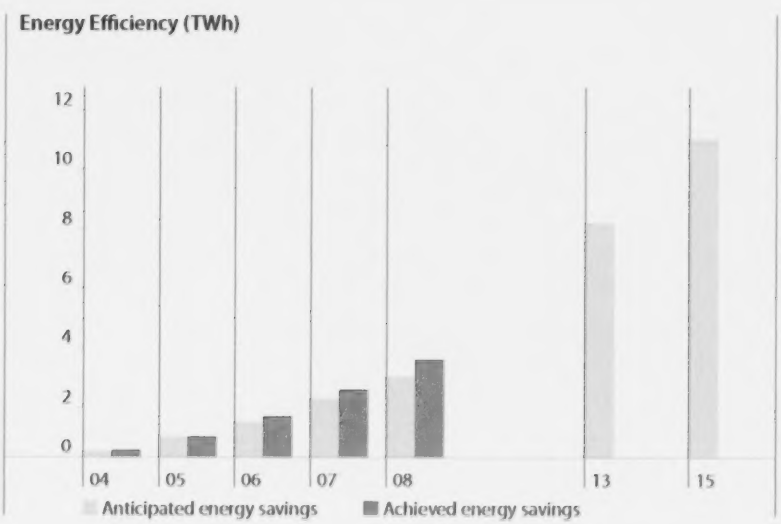
Hydro-Québec Distribution will continue to encourage large-power customers who have been particularly active in energy efficiency through the Energy Savers' Circle, established in 2005.

Under the EEP programs for residential customers, we will continue to support our ENERGY WISE Alliance partners, a network of commercial partners established in 2008, and pursue efforts to make customers more aware of energy efficiency. We will also continue to work with municipalities and local organizations to promote the ENERGY WISE Home Diagnostic.

Strategy 2 – Encourage the efficient and sustainable use of electricity.

Hydro-Québec Distribution plans to encourage the development of underground systems in new residential neighborhoods. To this end, it is continuing to work on reducing the cost difference between this technology and overhead lines. We have already begun talks with the Association provinciale des constructeurs d'habitations du Québec (APCHQ) and the Association de la construction du Québec (ACQ) to ensure that undergrounding is considered as an option from the very first stages of a residential project.

On another front, Hydro-Québec Distribution is working closely with the Canadian GeoExchange Coalition (CGC) to support the development of geothermal energy. Since 2007, the division has been offering financial assistance for the installation of geothermal systems in new and existing residential buildings heated with electricity. These systems are also covered under energy efficiency programs for business and commercial customers. Hydro-Québec Distribution will look at the possibility of offering assistance adapted to multiple-unit residential buildings. In addition, we will support pilot projects to test new types of facilities, such as community geothermal systems, which use a common well for several residences. If the results are conclusive, these systems will be included in our energy efficiency programs.



Lastly, Hydro-Québec Distribution intends to encourage the adoption of sustainable urban development practices by supporting the distributed generation of renewable energies such as geothermal, solar and wind power, as well as the implementation of measures designed to reduce energy consumption. To determine how we will contribute to this effort, we are currently studying a green neighborhood project, Cité verte, by real estate developer SSQ Groupe financier. Located in the city of Québec, this 800-unit project incorporates sustainable urban development principles right from the design stage. It includes a wide range of innovative measures such as a forest-biomass-fueled district heating system, LED (light-emitting diode) streetlights, grey-water heat recovery and a digital communication system providing information to all residents on how well they are managing waste, water and energy.

Strategy 3 – Pursue energy efficiency efforts targeting low-income customers.

Hydro-Québec Distribution plans to help low-income households manage their energy consumption better. After a pilot project ending in late 2009, we could extend an initiative to replace power-hungry refrigerators with more energy-efficient models to all low-income customers.

In addition, Hydro-Québec Distribution will step up its promotional efforts to increase participation by partners in the Energy Efficiency Retrofit Program for Low-Income Households. The program will be expanded to include a new component for private housing, developed by the Agence de l'efficacité énergétique in cooperation with energy distributors. Lastly, the division will continue to provide financial assistance for other programs offered by this agency, such as Éconologis.

Objective 3: Meet electricity needs in a flexible manner.

Hydro-Québec Distribution has access to a range of tools for managing the balance between electricity supply and demand at least cost.

Strategy 1 – Ensure optimal management of electricity supplies.

Owing to the economic downturn, the electricity sales forecast for 2008–2017 has been revised downward. Hydro-Québec Distribution has therefore given itself greater supply flexibility in order to restore the balance between customer needs and the means used to meet them. More specifically, the division signed agreements with TransCanada Energy (TCE) and Hydro-Québec Production to suspend or defer certain deliveries.

Hydro-Québec Distribution suspended deliveries from TCE in 2008 and 2009. The Régie de l'énergie noted that this solution is not only of economic interest, but also has undeniable benefits for the greenhouse gas balance.[25] In June 2009, we asked the Régie to approve a new agreement allowing us to suspend deliveries in 2010. We have also negotiated with TCE the possibility of extending the suspension agreement on an annual basis after 2010. As well, we will defer deliveries provided for under certain agreements with Hydro-Québec Production.

In addition, Hydro-Québec Distribution has negotiated framework agreements with Hydro-Québec Production that allow it to adjust in real time to variations in consumption or the unexpected unavailability of supplies. The agreement approved by the Régie de l'énergie in July 2007 covered the period from January 1, 2007, to December 31, 2008. The terms and conditions of a new agreement covering the period from January 1, 2009, to December 31, 2013, were submitted to the Régie in early 2009 for approval. We also rely on customer contributions—notably the interruptible electricity option offered to large- and medium-power customers—to meet very short-term needs.

Strategy 2 – Conclude tender calls for renewable energy.

Hydro-Québec Distribution expects the cost of new supplies during the 2009–2017 period to increase by nearly 4% annually on average, due to purchases of wind power resulting from the first two tender calls, as well as the anticipated cost of supplies from tender calls and the purchasing program under way.

By 2013, 3,500 MW of wind power will be under contract as a result of the division's tender calls.

25. See: www.regie-energie.qc.ca/audiences/decisions/D-2007-134.pdf (in French only).

In February 2005, as a result of the first tender call, Hydro-Québec Distribution signed eight contracts for a total of 990 MW of wind power. In June 2008, following a second tender call, 15 additional contracts to purchase 2,005 MW were signed. All contracts have been approved by the Régie de l'énergie. ▶ See Appendix 5, page 57.

Two other tender calls earmarked for projects by Aboriginal and other communities were issued in April 2009. They will supply an additional 500 MW beginning in late 2012. As a result, during the 2009–2017 period, wind power will make up 86% of the division's new long-term supplies.

The remaining 14% of long-term supplies will come, in almost equal parts, from biomass (tender call issued in April 2009) and small hydro (purchasing program launched in July 2009 after approval from the Régie).

Echoing the Northern Plan, Hydro-Québec Distribution is continuing to examine potential combined wind-diesel projects at Akulivik and Kangiqsualujjuaq, in Nunavik. We will also carry out studies with the Groupe de la technologie regarding the possibility of using hydrokinetic energy to supply certain off-grid systems (see the Innovation section, page 72).

In February 2006, the Régie de l'énergie approved an agreement signed in 2005 between Hydro-Québec Distribution and Hydro-Québec Production to facilitate integration of the first block of wind power (990 MW). In 2011, when this agreement comes to an end, Hydro-Québec Distribution will submit a new integration agreement to the Régie, which will also cover the blocks of 2,005 MW and 500 MW. This new agreement will be based on studies we are currently conducting in accordance with the expectations of the Régie to more accurately assess the capacity provided by wind power. In addition, to maximize wind power contributions to resource management, the division will continue to work with Hydro-Québec Production, Hydro-Québec TransÉnergie and industry partners to improve systems for forecasting wind and wind farm output.

Objective 4: Further enhance the division's performance.

Strategy 1 – Continue to improve efficiency.

In a decision handed down in March 2009,[26] the Régie de l'énergie stated that it was satisfied with the update of the integrated efficiency improvement plan submitted by Hydro-Québec Distribution. We will continue to implement this plan in order to limit increases in operating expenses. Efficiency gains will be achieved by making improvements in accordance with best industry practices. Since employee commitment and participation are key, Hydro-Québec Distribution will rally its employees around clear efficiency objectives. We plan to keep the average annual growth in net operating expenses per service contract below the level of inflation during the 2009–2013 period.

Among the efficiency measures and projects retained, Hydro-Québec Distribution plans to install an advanced metering infrastructure (AMI) incorporating a new generation of networked meters. This initiative will put Hydro-Québec at the leading edge of electrical utilities in its category.

Strategy 2 – Rely on technological innovation.

Hydro-Québec Distribution relies on technological innovation to improve the efficiency of the distribution system. We invest roughly $25 million annually in developing cutting-edge technological solutions in collaboration with IREQ, Hydro-Québec's research institute. We also support experimentation with new energy-efficient technologies under the EEP programs. Better-performing equipment will reduce losses and optimize the control of power flows.

Our research and development activities focus on the following innovation avenues:

- Reliability and efficient management of the system (through the use of techniques for locating faults on cables and conductors, for example)
- Asset management and optimal equipment maintenance
- Energy efficiency, demand-side management and other promising means for sustainable development

In addition, the energy technology laboratory (LTE) will continue to help customers to use electricity more efficiently. LTE projects will cover a wide range of areas, from the recovery and use of industrial waste heat to advanced lighting products.

26. See: www.regie-energie.qc.ca/audiences/decisions/D-2009-016.pdf (in French only).

Strategy 3 – Maintain expertise and develop competencies.

Some 30% of Hydro-Québec Distribution employees may retire by 2013. We will therefore prepare a new generation of competent workers and maintain the knowledge and expertise required to achieve our business objectives.

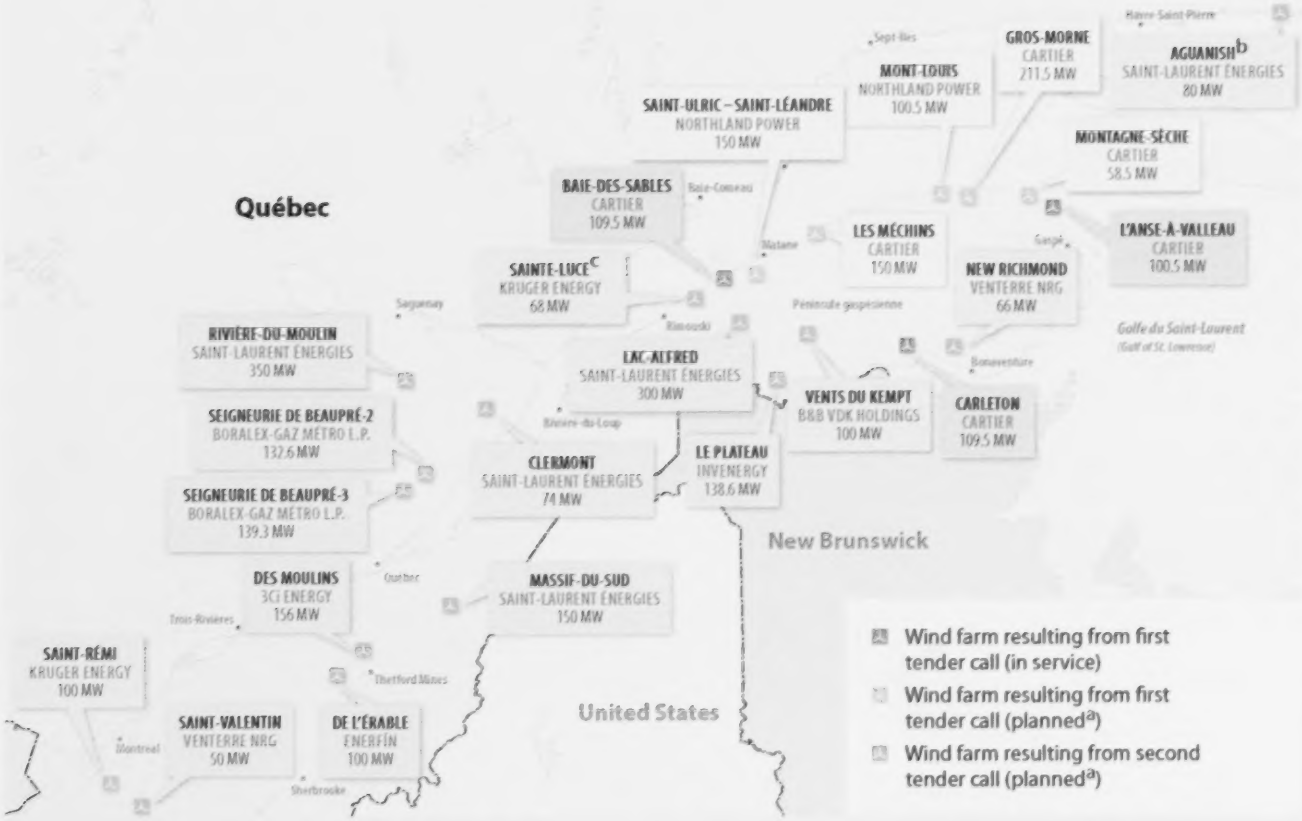
With this in mind, Hydro-Québec Distribution has begun to put in place mechanisms that make it less vulnerable and help it keep up with changing work requirements, for both ongoing operations and projects. This will help us plan overall labor needs and better target our knowledge transfer efforts.

We intend to adapt our staffing and competency development practices. For example, we will institute systematic learning assessment to increase the efficiency of training programs. At the same time, we will continue to favor a proactive communications approach to motivate employees and ensure that the division's concerns and strategies are well integrated.

To increase motivation among management, we will focus on preparing candidates for management positions, fostering ongoing skills development and optimizing performance management.

Appendix 5

Contracted Wind Power Projects



a) For a project to go ahead, developers must obtain the support of the host communities.

b) This project will be built elsewhere.

c) This project was canceled due to opposition from local communities.

Results of first tender call (990 MW)

- The eight contracted projects represent estimated investments of $2.1 billion for electricity generation and transmission by 2012.
- Three wind farms are on stream: Baie-des-Sables (November 2006), L'Anse-à-Valleau (November 2007) and Carleton (November 2008).

Results of second tender call (2,005 MW)

- The 15 contracted projects represent estimated investments of $5.5 billion for electricity generation and transmission by 2015.

A Tata Motors Indica Vista

Ford Escape Plug-In Hybrid tested by Hydro-Québec

Trolleybus under study at the Société de transport de Laval

Transportation Electrification

While oil has dominated the ground transportation sector for the last century, electricity will play an increasingly important role in both private and public transport from now on. This transformation, which is desirable in terms of energy security and necessary for reducing greenhouse gas (GHG) emissions, is now under way, and Hydro-Québec will actively contribute to it. The company has what it takes to do so: clean and renewable energy, a reliable grid, recognized expertise and attractive technologies.

Action plan

- Provide financial support for the development of electrical infrastructure for public transit.
- Develop and market advanced technologies.
- Test-drive plug-in vehicles and experiment with their integration into the power grid.
- Plan support infrastructure for vehicle charging.

Transportation Electrification: A Promising Future

During the period covered by the *Strategic Plan 2009–2013*, the company plans to be active in the development of technologies, infrastructure and commercial initiatives that will contribute to the electrification of ground transportation. During this period, major technological advances will be made, the first mass-produced plug-in hybrids will start to be seen on the roads, efficient charging infrastructure will be put in place so that these vehicles can be added to the power grids, and electrical public transit projects will be launched. Hydro-Québec will pursue initiatives on all these fronts.

The Importance of Transportation Electrification in Reducing GHG Emissions

In 2007, transportation was responsible for 42% (36 Mt) of all GHG emissions in Québec.[27] By contrast, power generation accounted for only 2.7%—a remarkable performance that is attributable to hydroelectricity. If it were used to power electric vehicles, this clean, renewable energy could replace a substantial portion of the fossil fuel used on our roads. The widespread use of electric vehicles—both for public and private transport—would therefore have a major impact on Québec's environmental track record.

The critical need to reduce GHG emissions in Québec and around the world demands strong and immediate action to lower fossil fuel consumption. Given the weight of fossil fuels in the world energy balance, the transportation sector cannot be ignored; there is no hope of achieving GHG reduction targets without the radical and rapid transformation of ground transportation. Behavior must change, as well as technologies: in the first case, mainly by increasing public transit use; in the second, by improving the energy efficiency of the entire sector through the large-scale introduction of electricity in private transport.

Electricity is a viable solution in transportation because it is an efficient energy vector encompassing a number of renewable, low-emission sources. In addition, electricity can replace fossil fuels quite easily. For purposes of illustration, the conversion of all automobiles in North America to electricity would reduce gasoline consumption by 70% and would increase electricity consumption by only about 15%. Moreover, vehicles would be plugged in mainly at night when the load on power grids is lighter.

Ground transportation electrification is therefore very promising. Considerable work must be done, however, before this promise can become a reality. Many players are involved, including automakers and their suppliers, battery manufacturers, electricity distributors and governments. Hydro-Québec is already collaborating with all these players. It was in this context, in the fall of 2008, that the company created a working group mandated to coordinate and lead its activities in the ground transportation sector.

27. See: unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/4771.php.

Hydro-Québec's Action Plan for Electric Transportation

Hydro-Québec's action plan for electric transportation has four thrusts:

- Financial support for the development of electrical infrastructure for public transit
- Development and marketing of advanced technologies, in particular:
  - TM4's MΦtive™ series electric motors
  - New battery materials, including lithium-iron-phosphate
- Test-driving of plug-in vehicles and experimenting with their integration into the power grid
- Planning of support infrastructure for vehicle charging (home and public charge spots)

Given the rapid changes in electric transportation, the action plan will be updated on the basis of market conditions and technological advances.

Public Transit

Financial support for the development of electrical infrastructure

In Québec as elsewhere, the efficiency and advantages of electricity for public transit have already been demonstrated. Currently, 50% of public transit users in the Montréal region use the metro or the Montréal–Deux-Montagnes commuter train line, both of which are powered by electricity. In addition, a number of electrification projects are currently under study. Modes under consideration include trolleybuses (on wheels), streetcars (on rails) and electric minibuses. Streetcars and trolleybuses are proven technologies and operate in many cities in Canada and the United States (Calgary, Toronto, Vancouver, Boston and Seattle). Aesthetic solutions have been developed for more harmoniously integrating the electric infrastructure, particularly the overhead lines used to supply power, with the urban fabric.

The environmental advantages of electric public transit are demonstrated in the example of an 18-m-long trolleybus that travels 37,000 km per year. This vehicle would use 150,000 kWh of clean, renewable electricity, compared with a diesel bus of the same size, which would emit close to 85 t of CO_2 annually for the same distance.[28] The annual output of a small hydroelectric generating station like Rapides-des-Cœurs would suffice to power 3,300 trolleybuses.

Hydro-Québec therefore wishes to encourage the adoption of electric public transit in Québec. Having established close relationships with the main local players in this field, it is currently participating in feasibility studies conducted by various public transit authorities to determine exactly what electrical infrastructure is needed and the level of investment assumed by Hydro-Québec for this infrastructure. For each project that could go ahead, Hydro-Québec Distribution's contribution would be submitted to the Régie de l'énergie for approval in accordance with the regulatory framework.

28. Calculations based on the emission of 2,294 g of CO_2 per kilometre.

In April 2009, Hydro-Québec Distribution agreed to participate in a feasibility study by the Société de transport de Laval (STL) for its trolleybus project. In May 2009, the division confirmed its participation in a study by the Agence métropolitaine de transport (AMT) on a project to convert commuter trains to electricity. At the end of these studies, scheduled for 2010, Hydro-Québec Distribution will be in a position to assess its contributions to these two projects and submit all the necessary information to the Régie de l'énergie and the various stakeholders. The division will continue its discussions with Québec's other transit authorities so that it can participate in their electrification projects on the same basis.

Plug-In Vehicles

Replacing one million gasoline-powered vehicles in Québec (25% of the current fleet) with electric vehicles would reduce GHG emissions by 3.4 Mt annually.[29] This electric fleet would only consume around 3 TWh per year, which corresponds to the annual output of a hydroelectric generating station like Eastmain-1, or less than 2% of the company's electricity sales in Québec in 2008.

In May 2009, the U.S. government adopted a plan to reduce reliance on oil and reduce GHG emissions by 900 Mt. Under this plan, a first in the United States, the average fuel consumption for the new vehicle fleet will be limited to 6.63 L/100 km in 2016. The major automakers are currently rethinking their vehicle lines based on environmental concerns and have announced the market rollout of all-electric and plug-in hybrid vehicles over the coming years. Such vehicles will plug in directly to the power grid using standard home outlets and public charge spots.

Automakers are initially targeting markets with attractive fiscal and regulatory incentives. As a case in point, the measures adopted by Norway explain why certain automakers have made it a priority in their marketing strategy for electric vehicles.

NORWAY: A LEADER IN FISCAL AND REGULATORY INCENTIVES

- Exemption from vehicle excise duty ($12,000 for compact models)
- Exemption from sales tax
- Exemption from annual road tax
- Free use of toll roads
- Exemption from taxes on company cars
- Free parking
- Access to reserved lanes

29. Assuming that the average plug-in vehicle would consume 2,900 kWh and avoid emissions of 3.4 t of CO_2 per year, or the emissions from a gasoline-fueled compact.

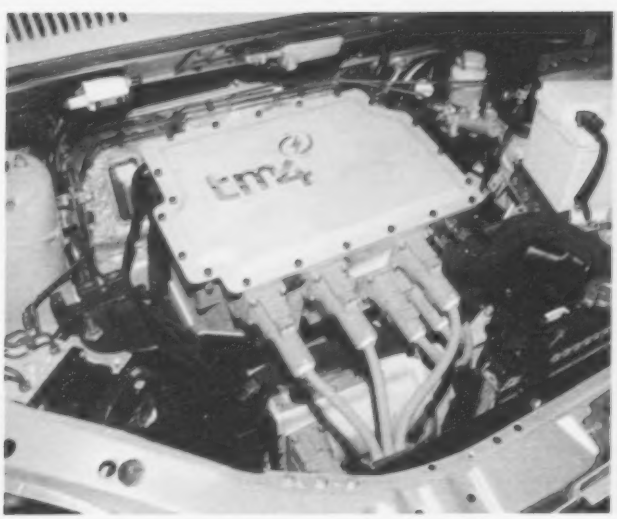
Development and marketing of advanced technologies

Hydro-Québec is also contributing to the development of plug-in vehicles through its technological expertise, with a focus on motors and battery materials.

Its subsidiary TM4 was established in 1998 with a mission to develop and market electric motors based on technologies developed or perfected by Hydro-Québec's research institute, IREQ.

In January 2009, TM4 announced that it was joining forces with Tata Motors (a subsidiary of India's largest automaker, the Tata Group) and the Norwegian company Miljø Grenland/Innovasjon (a subsidiary of Tata Motors) in a demonstration program for all-electric vehicles in Norway. TM4 is providing the electric motors (its latest-generation automobile motor, the TM4 MΦTIVE™ series) as well as power electronics and vehicle controllers. Resulting from a decade of research and development and incorporating several technologies patented by TM4, the motor has the best power-to-weight ratio in its class and industry-leading efficiency. Tata Motors is providing Miljø with the parts for the Indica Vista EV, a practical four-passenger car with a reasonable cargo area. It has an expected range of 200 km and acceleration of 0 to 60 km/h in less than 10 seconds.

Hydro-Québec intends to facilitate the mass production and marketing of TM4 electric motors by creating a joint venture with a world-scale auto parts manufacturer, while continuing to develop new products.



TM4's latest-generation electric motor

tm4 mΦtive™

Batteries are still the determining factor in the future success of plug-in vehicles.

Batteries consist of an anode, a cathode and an electrolyte. Lithium-iron-phosphate cathodes have shown a great deal of promise for increasing the stability and safety of lithium-ion batteries and reducing their cost. Hydro-Québec holds the North American and European patents for this technology. Molten salts also show great potential as an electrolyte, which conducts the lithium ions between the anode and the cathode; Hydro-Québec considers that it owns most of the world intellectual property for this technology. For the anode, IREQ is working on nanotitanates to increase battery life and performance. Hydro-Québec plans to grant licences to several partners to encourage high-quality and large-scale production, by major battery manufacturers, of the advanced materials it has developed.

In November 2008, IREQ signed two major agreements involving batteries. The first was with the Korean battery manufacturer VK EIG, to perfect materials that will increase the voltage of a lithium-ion battery to be used by a major international automaker to 5 V. Under the second agreement, IREQ will collaborate with the Japanese firm Showa Denko Group, a world leader in the manufacture of carbon fibres, to create carbon nanotubes, which will improve the contact between iron phosphate particles, thus increasing battery capacity.

Through its work on advanced materials, IREQ will continue to participate in efforts to improve the performance and reduce the cost of lithium-ion batteries.

Work at IREQ on molten salts for lithium-ion batteries

Test-driving of plug-in vehicles and experimenting with their integration into the power grid

Hydro-Québec wants to remain at the forefront of companies working on the addition of electric vehicles to power distribution grids.

The company will conduct projects to demonstrate the reliability and advantages of plug-in vehicles. It has signed a three-year agreement with the Ford Motor Company, under which Ford provided it with a prototype Ford Escape Plug-In Hybrid in June 2009. The only electric utility in Canada to sign such an agreement, Hydro-Québec will field-test this vehicle in order to analyze different charging modes and their impact on the grid.

In addition, the company has stepped up discussions with other potential partners. Among the means considered for attracting partners, it is looking at the feasibility of adding more plug-in vehicles to its fleet.

Planning of support infrastructure for vehicle charging (home and public charge spots)

Hydro-Québec also plans to carry out projects to test the implementation and use of charging infrastructure.

In July 2008, the company joined some 30 other electric utilities in a cooperation agreement with General Motors and the Electric Power Research Institute (EPRI). In this way, Hydro-Québec is helping to develop the technical parameters required to implement a North American vehicle charging infrastructure. This involves ensuring the development of vehicle charge spots that are safe, adapted to grid capacity and compatible continent-wide. In addition, Hydro-Québec has begun talks with other potential partners active in vehicle charging. In all these initiatives, the company's main concern is to encourage the adoption of simple, easy-to-use and cost-effective technological solutions.

Employees at the Centre de services partagés recycle and recover materials

Corporate Activities

Hydro-Québec relies on the expertise and commitment of all its employees to achieve its business objectives.

The corporate units work closely with the divisions to provide customers with high-quality services. They also contribute to the company's growth and the enhancement of its performance. In addition, they participate in various initiatives that are part of the fight against global warming.

Indicators

- Employee motivation, employee satisfaction (scales of 10)
- Work-related accident frequency rate (per 200,000 hours worked)
- Impact of technological innovation on company's net income ($M)
- Overall satisfaction with Hydro-Québec (scale of 10)
- Atmospheric emissions from the vehicle fleet (tonnes)

Employees

Employees are at the heart of the success enjoyed by Hydro-Québec in recent years. The company will rely on their expertise and commitment to achieve the objectives it has set for the 2009–2013 period.

Last year, Hydro-Québec renewed its collective agreements with seven of its eight unions, which represent 91% of its unionized workforce. These five-year agreements will be in effect until December 2013 or December 2014, as applicable, ensuring a good climate in the workplace that will foster the company's strong performance. A number of projects to increase organizational efficiency are also scheduled during the period covered by the Strategic Plan.

The health and safety of our employees will remain at the forefront of the company's concerns. First and foremost, they will drive our prevention efforts. In particular, Hydro-Québec plans to invest a great deal of energy in prevention for our young employees doing the most risky jobs, to make sure that they are aware of the importance of the safety measures as soon as they arrive. In terms of remedial action, the company will work to improve its methods for managing work-related accidents and disabilities. For example, we will offer new rehabilitation services to ensure a timely and successful return to work.

Overall job satisfaction and employee motivation have risen since 2000. Since motivation plays a key role in the achievement of our objectives, we adjust our management strategies annually to strengthen employee commitment. The goal is to increase the overall motivation index to a record level by 2013.

The company must also attract and retain a new generation of employees to ensure that it has the workforce and expertise it needs in the medium and long term. In accordance with its corporate succession plan, Hydro-Québec is working to improve its recruiting and staffing practices and to implement an interactive recruitment system. In May 2009, the company also implemented an equal access to job opportunities program in order to boost the representation of groups targeted under the *Act respecting equal access to employment in public bodies*.

Furthermore, since the achievement of our objectives also depends to a large degree on our managers' level of commitment, Hydro-Québec intends to bolster leadership development. Several initiatives will be launched to identify promising candidates for management positions. In addition, dynamic competency management as part of the systematic assessment of management performance will ensure that individuals with strong potential who wish to take on greater challenges will continue to receive better support.

Sustainable Development

Hydro-Québec will continue the sustainability initiatives it has undertaken and work to gain recognition for its contribution to this field.

We will carry out our *Sustainable Development Action Plan 2009–2013*,[30] which consists of 10 actions accompanied by improvement targets and specific indicators to measure our performance, and also provides for annual reporting. This Action Plan reaffirms Hydro-Québec's longstanding commitment to preserving the environment, collective well-being and economic development. It is intended to coordinate our efforts in this area with the government's action, and to continue integrating the principles of sustainable development into all the company's areas of activity.

Accordingly, we plan to keep on reducing transport-related greenhouse gas (GHG) emissions. Having successfully cut CO_2 emissions from our vehicle fleet by 5% in 2007 compared to 2005, three years earlier than expected, we raised our target to 10% by 2013—a goal that poses a considerable management challenge. To reach this new target, we will maintain a series of measures launched by the Centre de services partagés: purchase of more fuel-efficient vehicles, integration of electric and hybrid vehicles into our fleet, testing of a hybrid bucket truck and educating our employees on more environmentally responsible driving practices. Other initiatives targeting CO_2 emissions associated with business travel and employee commuting will be undertaken alongside these efforts.

In addition, we will reinforce our sustainable procurement practices. The company will maintain and extend the practices it has already established (purchase of recycled paper and ink cartridges, for example). We will also implement specifications based on environmental, ethical and economic criteria for five new commonly used products and encourage our suppliers to adopt sustainable practices.

30. See: www.hydroquebec.com/publications/en/sd_action_plan/index.html.

ADAPTING TO CLIMATE CHANGE

Hydro-Québec is a founding member of the Ouranos consortium, created in 2001 to study regional climatology and adaptation to climate change. The consortium brings together some 250 experts from Québec, the rest of Canada and abroad, including a number of researchers from our research institute, IREQ. In March 2009, the company renewed its cooperation agreement with Ouranos for a five-year period.

In the next few years, Ouranos will research the impacts of extreme weather conditions (strong winds, ice storms, rainfall in winter) on the management of power generation facilities in northern Québec, among other issues. The consortium will also study the effect of climate change on water resource management in southern Québec.

At the same time, we will keep up our efforts to raise awareness of Hydro-Québec's projects and their contribution to Québec's favorable GHG emissions record, and the environmental benefits of electricity sales to neighboring markets.

In the United States, two major regional initiatives aimed at setting an emissions cap and establishing a carbon credit trading market were introduced in the last few years: the Western Climate Initiative (WCI)[31] and the Regional Greenhouse Gas Initiative (RGGI).[32] Québec is a member of the WCI, which is currently developing its cap-and-trade system, and has observer status in the RGGI, which already has an operational market.

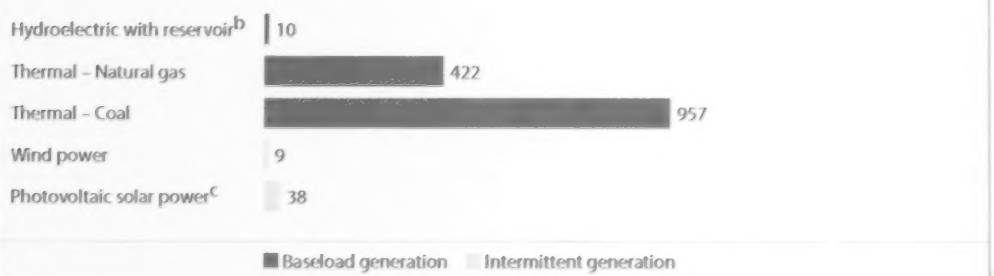
For its part, the new U.S. federal administration has opted for a change in course in terms of regulating GHG emissions which, in turn, alters the situation for the entire continent. The U.S. government is advocating the establishment of a cap-and-trade system. The same approach could also be adopted in Canada; in the spring of 2009, the federal Environment Minister indicated that the timetables and mechanisms laid out in the Canadian policy would be reviewed in the light of decisions made in the United States. The federal government will also take into consideration any GHG reduction targets that could be adopted at the United Nations Climate Change Conference to be held in Copenhagen in December 2009, as well as the prevailing economic situation.

Harmonizing the Canadian and American approaches would mean that the Canadian Regulatory Framework for Industrial Greenhouse Gas Emissions would not come into effect until 2012. Hydro-Québec will make the necessary representations to assert its interests in this area.

31. See: www.westernclimateinitiative.org.
32. See: www.rggi.org/home.

Hydroelectricity: One of the Best Generating Options in Terms of Greenhouse Gas Emissions

CO_2 Emissions (g/kWh) – Life Cycle Analysis[a]



a) CO_2 produced by technologies used in northeastern North America, including facility construction and operation and any fuel supplies required.

b) Estimated gross emissions from the Romaine complex. Net emissions will be lower.

c) Emissions mainly associated with the manufacture of solar panels.

In June 2009, the Québec government enacted a law[33] concerning the introduction of a cap-and-trade system. Among other things, this legislation will allow the government to set GHG reduction targets and establish mechanisms for implementing and managing such a system. Furthermore, some provisions of this law provide for harmonizing and integrating the Québec system with similar systems set up by other authorities or bodies, such as the WCI.

The commercial spinoffs of all these initiatives could prove favorable for Hydro-Québec, since we mainly produce hydroelectricity, complemented by a supply of wind power—two generating options that are very low in GHG emissions.

Innovation

Technological innovation

To remain at the leading edge of technology in all its lines of business, Hydro-Québec invests $100 million annually in the activities of its research institute, IREQ.

During the period covered by the *Strategic Plan 2009–2013*, IREQ will continue to develop sustainable technological solutions in collaboration with industry, universities and other research centres. The objective is to improve Hydro-Québec's performance and ensure the long-term operability of its facilities. IREQ's main areas of interest include the optimization of electricity generation and transmission as well as the digitization and remote operation of the grid, while its energy technology laboratory (LTE) focuses its efforts on Hydro-Québec's energy efficiency objectives.

The spinoffs of technological innovation correspond to costs and investments avoided as well as additional sales and gains in productivity. These spinoffs are measured in terms of the positive impact they have on the company's net income. The target for 2009–2013 is $200 million.

Hydro-Québec will continue to work on wind power integration along with various joint initiatives on climate change. At the same time, we will remain at the forefront of companies working on the integration of electric vehicles into power distribution grids, and we will continue to develop advanced materials for lithium-ion vehicle batteries.

33. *Act to amend the Environment Quality Act and other legislative provisions in relation to climate change*: www.mddep.gouv.qc.ca/changements/loi42/index.htm.

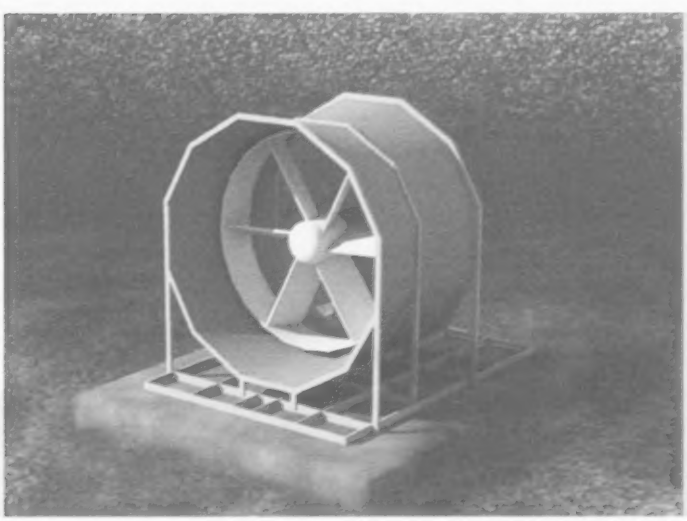
In addition, we will develop a new research avenue involving renewables based on water power, such as hydrokinetic and salinity-gradient energy. A pilot project to assess the performance of submerged river turbines used for hydrokinetic generation and their integration into the Hydro-Québec grid is currently under study. TM4, a Hydro-Québec subsidiary, could provide the generators needed for such a project. Submerged turbines are visually discreet, since they are installed several metres underwater in high-flow rivers. Installation is rapid and reversible and requires few civil engineering structures.

Northern Québec could be a suitable location for hydrokinetic facilities that exploit tidal power or currents. Hydro-Québec will evaluate the possibility of using this form of electricity generation to power off-grid systems with clean, renewable energy. Offering a way to invest in remote communities, such projects would have the advantage of using a locally available resource to meet local power needs.

Hydro-Québec will also continue its discussions with the Norwegian Statkraft Group, which is in the process of completing the construction of a demonstration prototype of a salinity-gradient power plant in the Oslo fjord. This type of facility produces electricity by exploiting the pressure created by the migration of freshwater to saltwater through a membrane. Hydro-Québec will assess the overall performance of the salinity-gradient power process, along with the potential for Québec, taking account of the associated environmental and economic issues. One of the keys to the success of this technology is the efficiency of salinity-gradient membranes.

Information and communications technologies

Information and communications technologies (ICTs) are at the heart of Hydro-Québec's generating, transmission and distribution infrastructure. They are used to transmit and process the information flows required to operate the power system. Combined with special protection systems on the 735-kV grid, ICTs help to ensure the security and reliability of our facilities.



HYDROKINETIC ENERGY

Part of a river's kinetic energy can be converted to electricity using a run-of-river submerged hydraulic turbine. Since there is no dam to regulate flow, hydrokinetic power sites must meet specific criteria, including a depth of several metres and a fairly strong current throughout the year.

To meet the needs arising as new generating facilities are brought onto the transmission system, the company will invest nearly $100 million in ICTs during the period covered by the *Strategic Plan 2009–2013*.

When all ICT-related activities were grouped together in 2007, Hydro-Québec adopted best industry practices in the area of governance. We will continue to work to improve efficiency in this respect. In particular, we will strengthen the integration of activities to reduce the number of technological platforms, mainly by consolidating, standardizing and virtualizing servers. The migration of almost all targeted systems will be achieved by the end of 2010.

ICT security is one of Hydro-Québec's priorities. Some $60 million will be allocated to cybersecurity between now and 2011. These funds will be used to ensure strict control over system access. In particular, we will strengthen the means used to detect intrusion attempts and proactively identify potential threats, while quickly implementing appropriate protection measures. Subsequently, we will reassess our needs.

Communications

Hydro-Québec must maintain high-quality communications with its customers, employees and the general public.

To increase awareness of our activities and related issues and to inform our employees, we already use a wide range of tools such as our Web site, intranet, webcasting, corporate publications and employee chat sessions with the President and Chief Executive Officer. The emergence of social networks and media presents new opportunities for exchange, dialogue and interaction with our various audiences.

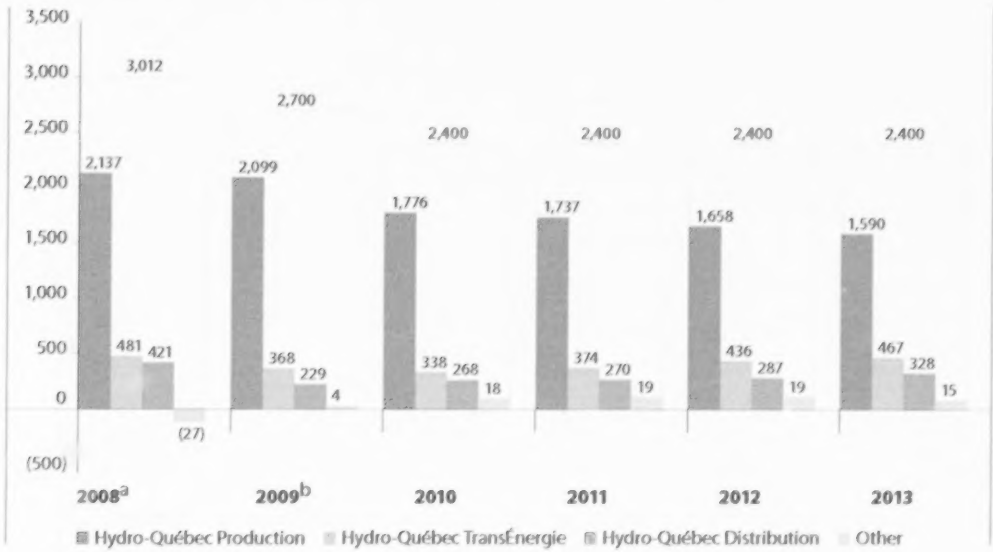
Highly conscious of the evolving expectations of Québec society, we will redouble our efforts to showcase our achievements and explain our activities, in order to better inform the general public. Continued engagement in constructive relations with all target audiences will be a cornerstone of the company's programs with regard to public affairs, media relations, speaking engagements, facility tours, internal communications, advertising and marketing communications, including those focusing on energy efficiency programs.

The diversity of Québec's cultural communities presents new recruitment challenges. We will have to step up communication efforts that support our intent to increase the representation within the company of groups targeted by the *Act respecting equal access to employment in public bodies*.

Hydro-Québec will also continue to provide financial support to a large number of organizations and activities in all regions of Québec and in various fields, in keeping with the corporate policy *Our Social Role*, an updated version of which was approved by the Board of Directors in April 2008. During that year, the company paid out a total of $25.9 million in donations and sponsorships in the following areas: culture, health and humanitarian aid, education and youth, socioeconomic development, sports and the environment. We also provided $5.1 million in funding for university research chairs and research contracts.

3. Financial Outlook

Contribution of Divisions to the Company's Income ($M)



a) Actual data.

b) Projections based on actual data for the first four months of 2009.

Hydro-Québec's Contribution to the Québec Economy for 2009–2013

Goods and services purchased	$13.4 billion
Dividends paid	$9.2 billion
Water-power royalties paid into the Generations Fund	$3.1 billion
Jobs sustained	271,400 person-years
Taxes	$1.8 billion
Guarantee fees	$0.9 billion

Financial Results

Statement of Operations

($M)	2008 (actual)	2009 (projected[a])	2010	2011	2012	2013
Revenue						
Electricity sales in Québec	10,445	10,522	10,410	10,760	11,024	11,537
Electricity sales outside Québec	1,919	1,513	1,672	1,688	1,830	1,931
Other revenue	353	290	326	330	370	379
Total revenue	**12,717**	**12,325**	**12,408**	**12,778**	**13,224**	**13,847**
Expenditure						
Operating expenses	2,497	2,622	2,781	2,822	2,887	2,957
Electricity and fuel purchases	1,406	1,178	1,088	1,218	1,471	1,676
Depreciation and amortization	2,336	2,292	2,614	2,788	2,845	3,054
Taxes	541	440	384	295	309	328
Water-power royalties	552	563	600	632	653	642
Regulatory deferrals	(72)	17	–	–	–	–
Financial expenses	2,445	2,513	2,541	2,623	2,659	2,790
Total expenditure	**9,705**	**9,625**	**10,008**	**10,378**	**10,824**	**11,447**
Income from continuing operations	**3,012**	**2,700**	**2,400**	**2,400**	**2,400**	**2,400**
Income from discontinued operations	129	–	–	–	–	–
Net income	**3,141**	**2,700**	**2,400**	**2,400**	**2,400**	**2,400**
Contribution of divisions to net income						
Hydro-Québec Production	*2,137*	*2,099*	*1,776*	*1,737*	*1,658*	*1,590*
Hydro-Québec TransÉnergie	*481*	*368*	*338*	*374*	*436*	*467*
Hydro-Québec Distribution	*421*	*229*	*268*	*270*	*287*	*328*
Other[b]	*102*[c]	*4*	*18*	*19*	*19*	*15*
Dividends declared	2,252	1,897	1,715	1,645	1,650	1,677
Return on shareholder's equity (%)	15.4	12.7	13.3	14.3	13.7	13.1
Rate adjustments forecasted for April 1[d] (%)			0.2	1.5	2.5	2.5

a) Projections based on actual data for the first four months of 2009.

b) Hydro-Québec Équipement, SEBJ, Groupe de la technologie, Groupe des ressources humaines et des services partagés and other corporate units.

c) Includes income from discontinued operations.

d) An adjustment of 1.2% went into effect on April 1, 2009, following decision D-2009-021 of the Régie de l'énergie.

Net income. Hydro-Québec is committed to earning net income of $2,700 million in 2009, and $2,400 million a year over the 2010–2013 period. These results reflect the current outlook for exchange rates and the prospects for energy and aluminum prices, which in turn account for the anticipated decline in net income for 2010–2013. The results also take into account the expected impact, as at the Strategic Plan date, of the changeover to International Financial Reporting Standards (IFRS), for which the implementation date was set at January 1, 2011, by the Canadian Accounting Standards Board.

Return on shareholder's equity. This ratio will increase primarily as a result of the restatement of retained earnings, made necessary by the transition to IFRS.

Dividends declared. Dividends of $8.6 billion will be declared for 2009–2013, namely 75% of net income calculated according to the parameters of the *Hydro-Québec Act*. Dividends are paid to the shareholder in the year following the one in which they are declared.

Electricity sales in Québec. Sales revenue will increase by $1.0 billion from 2009 to 2013, spurred by growth in the demand for electricity. Higher sales will push up supply and transmission costs, among other cost components; hence the need for the rate adjustments forecasted by the company.

Electricity sales outside Québec. Hydro-Québec Production's revenue from sales outside Québec will rise by more than $0.4 billion from 2009 to 2013. High prices on export markets made 2008 an exceptional year. As for 2009 and the following years, the revenue forecast for sales outside Québec reflects the current prospects for market prices and takes into account the coming on stream of the Rupert diversion and Eastmain-1-A and Sarcelle powerhouses over the Strategic Plan period.

Other revenue. Other revenue includes sales by the subsidiary Bucksport Energy, transmission services billed to third parties by Hydro-Québec TransÉnergie, and administrative fees billed by Hydro-Québec Distribution.

Operating expenses. Over the 2009–2013 period, operating expenses will increase by $460 million, mainly because of the growth in operations, namely the commissioning of major new generating and transmission facilities, the implementation of specific projects approved by the Régie de l'énergie, and the increase in the number of customers connected to the distribution grid. This growth in operations and the impact of accounting standards will account for over 68% of the increase in operating expenses, or $314 million. The remaining $146 million or 1.1% in average annual growth will primarily stem from payroll indexing and inflation. The impact of these two factors will be mitigated by substantial efficiency gains throughout the company's operations. ▶ See Appendix 6, page 86.

Electricity and fuel purchases. The increase in these costs over the Strategic Plan period will be attributable chiefly to Hydro-Québec Distribution's increased electricity purchases from external suppliers, mostly under tender calls for wind power.

Depreciation and amortization. The depreciation and amortization expense will rise mainly because of the commissioning of major facilities and investments in the Energy Efficiency Plan. The marked increase in this expense in 2010 reflects the transition from the sinking fund method to the straight-line method.

Taxes. The progressive decrease in the capital tax until 2011, when it will be abolished, will be partially offset by the increase in the amounts paid as public utilities tax, prorated to the value of the related fixed assets in service.

Water-power royalties. Since January 1, 2007, Hydro-Québec has been required to pay water-power royalties, which will rise mainly as a function of Hydro-Québec Production's power generation.

Regulatory deferrals. Regulatory deferrals correspond to variances between the forecasts made for rate applications and the results of the regulated divisions.

Financial expenses. Financial expenses will rise progressively as major facilities are commissioned, given that asset financing expenses are charged to the statement of operations as of the commissioning date.

Balance Sheet and Capitalization

($M)	2008 (actual)	2009 (projected[a])	2010	2011	2012	2013
Assets						
Property, plant and equipment, intangible assets and regulatory assets	57,019	60,295	58,550	60,465	63,031	65,193
Hydro-Québec Production	*29,742*	*32,323*	*29,999*	*31,121*	*32,495*	*33,170*
Hydro-Québec TransÉnergie	*16,889*	*17,376*	*17,637*	*18,451*	*19,215*	*20,232*
Hydro-Québec Distribution	*9,945*	*10,051*	*10,325*	*10,279*	*10,664*	*11,131*
Other[b]	*443*	*545*	*589*	*614*	*657*	*660*
Other assets	9,755	7,483	7,637	4,895	5,321	5,814
Total assets	**66,774**	**67,778**	**66,187**	**65,360**	**68,352**	**71,007**
Liabilities and shareholder's equity						
Long-term debt	35,645	36,255	37,107	39,343	41,625	43,802
Other liabilities	9,067	8,594	9,545	7,997	8,033	7,990
Total liabilities	**44,712**	**44,849**	**46,652**	**47,340**	**49,658**	**51,792**
Shareholder's equity	**22,062**	**22,929**	**19,535**	**18,020**	**18,694**	**19,215**
Total liabilities and shareholder's equity	**66,774**	**67,778**	**66,187**	**65,360**	**68,352**	**71,007**
Capitalization (%)	**37.7**	**38.5**	**33.0**	**30.7**	**30.3**	**29.9**

a) Projections based on actual data for the first four months of 2009.

b) Hydro-Québec Équipement, SEBJ, Groupe de la technologie, Groupe des ressources humaines et des services partagés and other corporate units.

Property, plant and equipment, intangible assets and regulatory assets. These items will total $65.2 billion in 2013, up $8.2 billion over 2008. This growth reflects the investments planned for the Strategic Plan period.

Other assets. Other assets include cash and cash equivalents, accounts receivable, short-term investments and derivative instrument assets. Their $3.9-billion decrease over the Strategic Plan period will be chiefly attributable to the change in short-term investments.

Long-term debt. In 2013, long-term debt will total $43.8 billion, up $8.2 billion from 2008, primarily as a result of the $25.6 billion in investments planned for the Strategic Plan period.

Other liabilities. Other liabilities, which include accounts payable, dividends payable, derivative instrument liabilities and the current portion of the long-term debt, will decline by close to $1.1 billion over the 2009–2013 period.

Shareholder's equity. As shown in the table below, shareholder's equity will increase by $1.2 billion between 2011 and 2013 once the financial data have been restated as part of the migration to IFRS.

Capitalization. Capitalization will decline because of the restatement of retained earnings as part of the transition to the straight-line method of depreciation in 2010 and the changeover to IFRS in 2011. It will then hold steady at about 30% until 2013.

Changes in Shareholder's Equity

($M)	2008 (actual)	2009 (projected[a])	2010	2011	2012	2013
Shareholder's equity before restatement of retained earnings	22,062	22,929	23,535	24,020	24,694	25,215
Restatement of retained earnings						
Straight-line method of depreciation	–	–	(4,000)	–	–	–
Employee future benefits, regulatory practices and other	–	–	–	(2,000)	–	–
Shareholder's equity	22,062	22,929	19,535	18,020[b]	18,694[c]	19,215[c]

a) Projections based on actual data for the first four months of 2009.

b) Taking into account the cumulative impact of the 2010 restatement.

c) Taking into account the cumulative impact of the restatements in 2010 and 2011.

Statement of Cash Flows, Self-Financing and Interest Coverage

($M)	2008 (actual)	2009 (projected[a])	2010	2011	2012	2013	Total 2009–2013
Investments[b]	3,775	5,507	4,720	4,965	5,247	5,204	25,643
Maturities and redemptions	2,734	688	479	2,699	1,371	1,162	6,399
Dividends paid	2,095	2,252	1,897	1,715	1,645	1,650	9,159
Uses of funds	**8,604**	**8,447**	**7,096**	**9,379**	**8,263**	**8,016**	**41,201**
Operations	5,015	4,493	4,404	4,632	4,915	4,987	23,431
Financing[c]	3,589	3,954	2,692	4,747	3,348	3,029	17,770
Sources of funds	**8,604**	**8,447**	**7,096**	**9,379**	**8,263**	**8,016**	**41,201**
Self-financing (%)	44.9	36.2	48.2	38.1	49.4	52.4	
Interest coverage	2.12	1.94	1.86	1.77	1.77	1.75	

a) Projections based on actual data for the first four months of 2009.

b) This item groups together investments in property, plant and equipment, intangible assets and the Energy Efficiency Plan (EEP), investments in securities, deferred expenses, and acquisitions and disposals of holdings.

c) Including the change in short-term investments, cash and cash equivalents.

Over the 2009–2013 period, operating activities will generate $23.4 billion. Hydro-Québec will use these funds, plus $17.8 billion in financing, to carry out its investment program, to redeem and repay $6.4 billion in debt, and to pay dividends on the order of $9.2 billion to the Québec government.

Cash from operations will help maintain the self-financing and interest coverage ratios at relatively high levels. The self-financing ratio represents the portion of financing requirements that can be met by cash flows from the company's operating activities, less dividends paid. Interest coverage measures the company's ability to pay interest expenses from operating income.

Investments by Division

($M)	2008 (actual)	2009 (projected[a])	2010	2011	2012	2013	Total 2009–2013
Hydro-Québec Production	1,894	2,454	2,244	1,950	2,068	1,653	**10,369**
Hydro-Québec TransÉnergie	1,097	1,231	1,231	1,752	1,662	1,946	**7,822**
Hydro-Québec Distribution	900	1,044	1,138	1,179	1,383	1,482	**6,226**
Other[b]	101	156	137	116	144	116	**669**
Total investments[c]	**3,992**	**4,885**	**4,750**	**4,997**	**5,257**	**5,197**	**25,086**

a) Projections based on actual data for the first four months of 2009.

b) Hydro-Québec Équipement, SEBJ, Groupe de la technologie, Groupe des ressources humaines et des services partagés and other corporate units.

c) Investments in property, plant and equipment and in intangible assets having an impact on cash and Energy Efficiency Plan costs.

Hydro-Québec Production. Over the Strategic Plan period, close to 60% of the division's $10.4 billion in investments will be allocated to the development of the generating fleet, including $3.0 billion for the Eastmain-1-A/Sarcelle/Rupert project and $3.0 billion for the Romaine complex. In addition, investments of $1.6 billion are planned over the period for the refurbishment of Gentilly-2 generating station.

Hydro-Québec TransÉnergie. Investments of $7.8 billion will be allocated to the transmission grid over the 2009–2013 period. More than half, or $4.1 billion, will be used to develop the grid, including $1.3 billion to connect wind farms built as a result of Hydro-Québec Distribution's calls for tender. More than $3.7 billion will be required for maintenance and improvements to facilities.

Hydro-Québec Distribution. Investments of $6.2 billion are projected over the Strategic Plan period: $1.6 billion will be used to keep pace with growth in electricity consumption in Québec, $2.9 billion for maintenance and improvements to facilities, and $1.7 billion for the Energy Efficiency Plan.

Other. Investments of $0.7 billion will be earmarked for the service telecommunications network ($0.4 billion), shared services ($0.2 billion) and corporate activities ($0.1 billion).

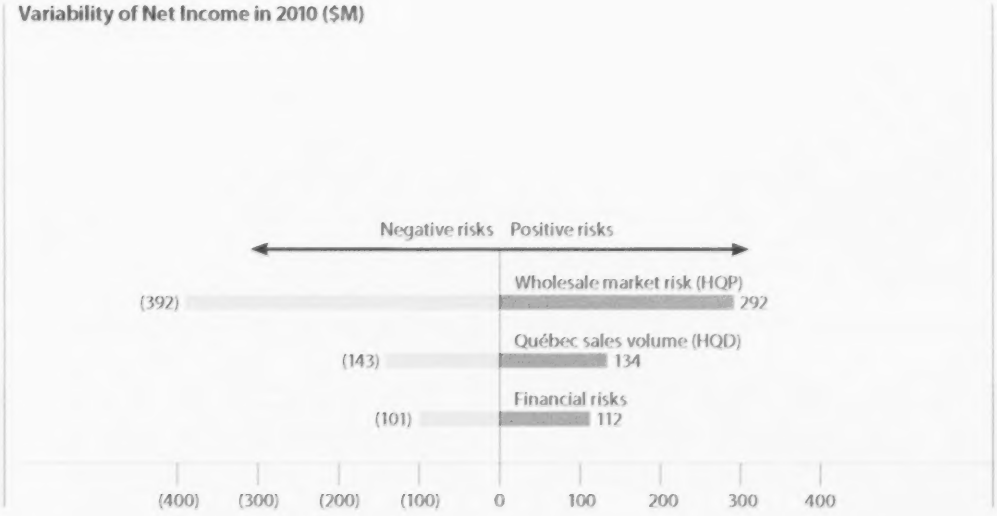
Sensitivity Analysis

The financial outlook is based on the following main economic parameters:

	2008 (actual)	2009	2010	2011	2012	2013
Exchange rate (C$/US$)	1.07	1.18	1.10	1.10	1.10	1.10
Bankers' acceptances – Canada, 3 months (%)	3.08	1.00	1.25	2.00	2.75	3.50
Government bonds – Canada, 10 years (%)	3.57	3.00	3.50	4.00	4.25	4.50
Price of aluminum U.S. Midwest (US$/tonne)	2,658	1,557	1,700	1,750	1,850	2,000
Price of natural gas NYMEX Henry Hub (US$/MBtu)	8.81	4.50	6.00	6.75	7.00	7.10

A sensitivity analysis was done to assess the impact of various risks on the net income forecasted for 2010. The figures presented in the Variability of Net Income in 2010 chart cover a 70% probability range. In the case of financial risks, for example, the sensitivity analysis shows that there is a 15% probability that changes in economic parameters will result in a decline of more than $101 million in net income or, conversely, a 15% probability that changes in economic parameters will result in an increase of more than $112 million in net income.

Variability of Net Income in 2010 ($M)



Wholesale market risk concerns the attaining of objectives set mainly for the export sales of Hydro-Québec Production (HQP). This risk is assessed in an integrated manner in order to present the overall effect on net income. Its assessment takes into account the impact of unpredictable runoff, the volatility of electricity prices, and the availability of generating and transmission facilities.

The variability of sales volume in Québec, once rates have been set, also has an impact on the company's net income. Other significant uncertainties for Hydro-Québec Distribution (HQD), such as unforeseeable fluctuations in supply costs and the vagaries of weather, do not have any effect on net income because they are covered by regulatory adjustment mechanisms.

Financial risks are linked to the Canadian dollar exchange rate against the U.S. dollar, short- and long-term interest rates, the price of aluminum and the pension expense. Integrated management of these risks, through the use of derivatives for instance, makes it possible to reduce the impact of changes in economic parameters on the company's results.

Given all the risks involved, the probability of achieving net income of $2.4 billion in 2010 is 56%. This assessment reflects the fact that no budget contingency for runoff conditions has been incorporated into the forecast. A budget contingency of $130 million for runoff conditions in 2010 would be needed for a 70% probability.

For the entire Strategic Plan period, there is a 52% probability of achieving aggregate net income of $12.3 billion. A budget contingency of at least $600 million for runoff conditions would be needed for a 70% probability of achieving aggregate net income of $12.3 billion.

Economic Spinoffs

Employment Sustained by Hydro-Québec's Operations

Person-years[a]	2009	2010	2011	2012	2013	Total 2009–2013
Operations	25,000	25,100	25,100	25,200	25,400	**125,800**
Investments	22,500	21,100	19,500	21,300	22,500	**106,900**
Energy Efficiency Plan	2,400	2,500	2,600	2,900	3,000	**13,400**
Purchases from independent power producers	1,700	1,200	8,000	8,300	6,100	**25,300**
Total	**51,600**	**49,900**	**55,200**	**57,700**	**57,000**	**271,400**

a) Unit of measure used to quantify labor. One person-year is equal to one person working for one year, two people working for six months, etc.

Hydro-Québec sustains employment in all regions of Québec. Between 2009 and 2013, its activities will help maintain about 271,400 person-years in direct and indirect jobs.

More specifically, operations will sustain 125,800 person-years, nearly 30% of which will be in indirect jobs. The company's large investment program will account for 106,900 person-years,, most of them in jobs with suppliers of goods and services. Of this number, more than 30,000 person-years are related to the Eastmain-1-A/Sarcelle/Rupert project and the Romaine complex.

Over the 2009–2013 period, the Energy Efficiency Plan will support approximately 13,400 person-years, to which will be added 4,400 person-years related to investments of $0.9 billion made by partners and participating customers, bringing the number of person-years sustained by energy efficiency initiatives to 17,800.

Lastly, electricity purchases from independent power producers (primarily wind farm owners) will support up to 25,300 person-years over the Strategic Plan period, up significantly as a result of the supply contracts awarded by Hydro-Québec Distribution. The vast majority of these jobs are related to the construction and maintenance of wind farms.

Tax Contributions and Dividends

Between 2009 and 2013, Hydro-Québec will pay the Québec government close to $9.2 billion in dividends, $3.1 billion in water-power royalties, $0.9 billion in debt guarantee fees, $1.3 billion in public utilities tax and $0.2 billion in capital tax. The company will also pay close to $0.2 billion in property and school taxes to various municipalities.

Regional Economic Impact

Hydro-Québec's operations create considerable economic spinoffs in all regions of Québec.[34] In 2008, the company purchased $2.7 billion in goods and services, including $2.4 billion (89%) from Québec-based businesses, helping to sustain jobs equivalent to 16,700 person-years in Québec. Over the 2009–2013 period, Hydro-Québec's purchases will amount to $15.0 billion, of which $13.4 billion (89%) will be made within Québec.

Hydro-Québec favors products made in Québec and strives to carry out its purchases throughout all the regions, at the best cost and according to strict procurement criteria.

Hydro-Québec's many construction sites have a major impact on regional economies. At the height of construction in October 2008, for instance, close to 4,000 people were working on the Eastmain-1-A/Sarcelle/Rupert project. Upon completion, this project will have sustained a total of 2,700 person-years of employment in the Saguenay/Lac-Saint-Jean region and 1,700 person-years in Abitibi-Témiscamingue. The Romaine complex will have spinoffs of $1.3 billion in Côte-Nord. From 2012 to 2016, peak workforce will exceed 2,000, with most of the workers coming from the region. In addition, the refurbishment project for Gentilly-2 generating station will have spinoffs of $600 million in Québec, including $200 million in the host region, and will create some 800 jobs over a 20-month period in 2011 and 2012.

34. For a detailed analysis of the economic spinoffs for each administrative region in Québec (in French only), see: www.hydroquebec.com/publications/fr/profil_regional/index.html.

Appendix 6

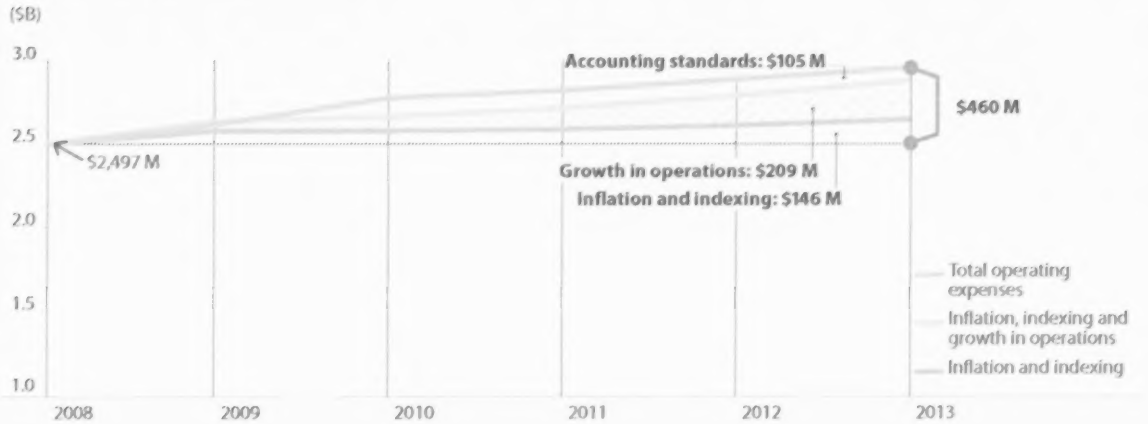
Changes in Operating Expenses from 2009 to 2013

Strong growth in Hydro-Québec's operations over the next few years will lead to higher operating expenses, primarily as a result of the commissioning of major generating and transmission facilities, the implementation of projects approved by the Régie de l'énergie, and the increase in the number of customers connected to the distribution grid.

Strong Growth in Operations for 2009–2013

- 4 new generating stations
- Start of operation of the Rupert diversion
- 882 km of new transmission lines
- New interconnection with Ontario (1,250 MW)
- 5 new transmission substations (>120 kV)
- 2,700 km of new distribution lines
- 187,000 new service contracts (+4.8%)
- 209 km of roads built
- 78 new dams and dikes
- 21 hydraulic structures (weirs and other)
- Activities related to TM4 electric motors

Changes in Operating Expenses



($M)	2008 (actual)	2009[a]	2010	2011	2012	2013	2008–2013 difference	Average annual growth
Inflation and indexing	–	82[b]	(1)	8	26	31	146	1.1%
Growth in operations	–	50	35	47	44	33	209	
Accounting standards	–	(7)	125[c]	(14)	(5)	6	105	
Total operating expenses	**2,497**	**2,622**	**2,781**	**2,822**	**2,887**	**2,957**	**460**	

a) Projections based on actual data for the first four months of 2009.

b) Including $53 million in bad debt for Hydro-Québec Distribution. An amount of $34 million is attributable to AbitibiBowater (Hydro-Québec Distribution, $28 million; Hydro-Québec Production, $6 million).

c) Variance in pension expense due to the actuarial impact of higher interest rates on long-term corporate bonds in the current recession.

Over the five-year period (2009–2013), operating expenses will rise by $460 million. The higher volume of operations and the impact of accounting standards will account for more than 68% of this increase, or $314 million. The remaining $146 million, or 1.1% in average annual growth, will primarily stem from payroll indexing and inflation. The impact of these two factors will be mitigated by substantial efficiency gains throughout the company's operations.

Units of measure

V:	volt (a unit for measuring voltage)
kV:	kilovolt (one thousand volts)
W:	watt (a unit for measuring power)
kW:	kilowatt (one thousand watts)
MW:	megawatt (one million watts)
GW:	gigawatt (one million kilowatts)
Wh:	watthour (a unit for measuring electric energy)
kWh:	kilowatthour (one thousand watthours)
MWh:	megawatthour (one million watthours)
GWh:	gigawatthour (one million kilowatthours)
TWh:	terawatthour (one billion kilowatthours)
$M:	millions of dollars
$B:	billions of dollars
¢/kWh:	cents ($0.01) per kilowatthour
g:	gram
g/kWh:	grams per kilowatthour
L:	litre
L/100 km:	litres per hundred kilometres
t:	tonne (metric ton)
Mt:	million tonnes
km:	kilometre
km/h:	kilometres per hour
MBtu:	million Btu (British thermal units)

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